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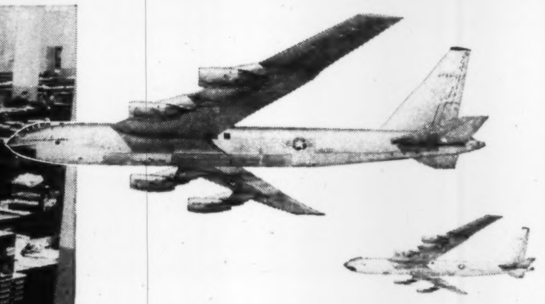

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> ***"Through research, discussion, publication, and other appropriate means to conduct and promote scientific study of the principles governing organized effort in industrial and economic life . . . for the general betterment of society . . ."***
>
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MEASUREMENT OF MANAGEMENT

GENERAL ELECTRIC had divided the job of managing into four primary elements:

(1) *Planning* — "to determine what objectives should be established to utilize human and material resources of the enterprise. . ."

(2) *Organizing* — "to determine how the . . . resources of the enterprise are to be utilized. . ."

(3) *Integrating* — "to integrate and synchronize the human resources, to obtain most effective utilization of men, materials, machines and money . . . the resources of the business."

(4) *Measuring* — "to evolve standards, to devise measuring mechanisms to analyze progress and performance."

Although the term "measuring" may be relatively new as a major element of management, progress has been recorded and measured since the dawn of civilization. As individuals we are appraised and judged in some form or another from the cradle to the grave. What is new, however, is recognition of the importance of measuring as a vital part of the managers job and the development of new practices and concepts.

Mr. Ralph Cordiner, President of General Electric, in discussing opportunities for business and managers pointed out "the need for a more accurate system of measuring the performance of business and individuals associated with business."

To help fill this need, S.A.M. presented a year ago the first professional management conference ever held on "Measurement of Management." Because of the enthusiastic response from all levels and functions of business, including many company presidents, we will hold our second conference in New York City, October 25 and 26, covering "Progress in Measurement of Management." A comprehensive review of the latest and most effective techniques of measuring business and executive accomplishments again will be presented by outstanding men. This S.A.M. program includes such functions as Marketing, Manufacturing, Finance, Research, Employee and Public Relations, as well as measurement of the basic elements of management.

Measurement requires much more than casual observation and general information. We are looking for the specifications for a result—a clearer picture of what we are trying to accomplish. Measurement has as its underlying philosophy, growth and development of the individual, clarification of business objectives and creating a climate in which each individual will make his maximum contribution to his company.

Companies with experience in developing systems of measuring performance have reached two rather interesting conclusions:

(1) The development of measurement criteria has presented a new challenge to their people.

(2) There is only one common standard that should be set—continuous refinement and improvement in results.

In this field, S.A.M. believes that the latest practices are far ahead of the management literature. Many of these practices will be presented this month at our Fall Conference.

John B. Joynt
National President

The articles published in this magazine are meant to stimulate as well as to inform. The editors of *Advanced Management* are pleased when our editorial content inspires discussion among management experts, and we are, therefore, glad to publish this paper by the noted British authority on scientific management — a paper inspired by Colonel Urwick's reaction to an article by Waino W. Suojanen entitled *Span of Control — Fact or Fable?* which appeared in the November 1955 issue of *Advanced Management*.

The Span Of Control—Some Facts About The Fables

**by Lt. Col. Lyndall F. Urwick,
O.B.E., M.C., M.A.**

**Chairman, Urwick, Orr & Partners
London, England**

IN THE second volume of his great biography of Robert E. Lee, Douglas Southall Freeman comments on the contrast between Lee's handling of the Confederate Army in the battles of the Seven Days and at Second Manassas. Of the first he writes "the campaign will always remain a tragic monument to defective staff work.[1] . . . . The reasons for this were in part a lack of training and in part a bad organization.[2] . . . . Lee was scarcely more adept in handling a staff at this time than the officers were in serving him."[3]

But, "Lee's strategy was better at Second Manassas than around Richmond. It was better because it was somewhat simpler, and, still more, because it placed responsibility in the hands of fewer men. There were no more attempts to bring six commands, under six semi-independent generals, together on the field of battle, as at Frayser's Farm. Divisions remained, as did divisional commanders, but the responsibility of executing Lee's strategical plan was placed on three men — Jackson, Longstreet and Stuart. *This concentration of authority was one reason for success.*"[4]

There can be no clearer example in history of the advantage of the principle of organization which has come to be described as "The Span of Control". But, despite the testimony of centuries of military experience and of many business executives who have discovered the advantage of simplifying their own organization and allowing fewer people to report to them directly, the principle is still under constant challenge. Possibly those who find themselves in doubt about it share secretly the conviction so tersely expressed in the classic dictum . . . "history is bunk".[5]

The latest champion to enter the lists is Dr. Waino W. Suojanen who contributed an article on the subject to *Advanced Management* for November 1955 under the title—"The Span of Control — Fact or Fable?"[6] He summarized his views in the sentence "the gist of the argument advanced here is that the span of control is no longer a valid principle of organization in view of the advances that have occurred in those social sciences that relate directly to administrative theory. The emergence of the primary group concept leads logically to group co-ordination."[7]

Perhaps he will pardon an unconvinced "Span-of-Controller" from putting the simple question "What advances in what social sciences since when?"

Apparently the "advances" to which Suojanen refers consist in what he describes as "the primary group concept". But when one tries to discover exactly what he means by this phrase difficulties occur. Turning to his paragraph headed "The Role of the Primary Group" we learn that "the unit organization comes into being as a component of a larger formal organization, 'when 1. there are persons able to co-operate with each

**COLONEL
LYNDALL
F.
URWICK**

COLONEL LYNDALL F. URWICK, Chairman of the British consulting firm of Urwick, Orr and Partners, won worldwide reputation as Director of the International Management Institute during 1928-1933. Since that time he has served as Vice-chairman of the British Management Council and as an active member of the International Committee of Scientific Management. His books include **The Meaning of Rationalization,** 1929; **Management of Tomorrow,** 1933; **Papers on the Science of Administration** (with L. Gulick), 1937; **Elements of Administration,** 1944; **The Making of Scientific Management** (with E. F. L. Brecht), 1948; and **The Golden Book of Management,** 1955. He holds the Gold Medal of the Comité International de l'Organisation Scientifique, and the Wallace Clark International Management Award.

other, 2. who are willing to contribute action, 3. to accomplish a common purpose'."[8] The quotation is attributed to Mr. Chester I. Barnard's *The Functions of the Executive* and the 1938 edition. But, the words quoted are not those used by Barnard. He wrote "An organization comes into being when 1. there are persons able to *communicate* with each other, 2. etc." That he regarded the word *communicate* as of importance is clear from his next sentence "The elements of an organization are three 1. *communication*, 2. etc." He says elsewhere "the first executive function is to develop and maintain a system of *communication*"[10] and "the structure, extensiveness and scope of organization are almost entirely determined by *communication* techniques."[11]

Much of the case in favour of a limited span of control is based on recognition of this central position of processes of communication. From one standpoint an executive is simply the centre of a system of communication. If he attempts to shoulder responsibility for the direct supervision of more than a limited number of subordinates one of two things happens a. Either his communication with some or all of them becomes defective or b. His preoccupations with the formal system of communication become so detailed and overwhelming that he has little time left for his other duties. By changing the phrase "able to *communicate*" in Barnard's statement to "able to *co-operate*", Suojanen has begged the issue. The purpose of all formal organization is to facilitate co-operation. If, by definition, members of a group are "able to co-operate", then they have little need of formal organization.

Indeed, his paper, which in form starts as a critique of the principle of the span of control, develops into a general attack on the whole idea of formal organization as understood by students of scientific management. It is this which renders it both misleading and unrealistic. But, since some of the very theoretical assertions which it advances are concealed under a cloak of false "scientism", it is well adapted to persuade people, debarred by the pressure of practical responsibilities from analytic reading and re-reading of an academic treatise, into the belief that there is some wonderful new "discovery" which makes nonsense of the principles precipitated by students of Management over the last half century.

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It is this danger which makes it advisable to deal with its arguments in some detail.

Suojanen begins his exposition with a false antithesis. He argues that there is a contradiction between the principle of the span of control and the principle that the number of levels in an organization should be kept as few as possible. On this point he cites Professor Herbert A. Simon. But the chapter in Simon's *Administrative Behaviour* on "Some Problems of Administrative Theory" from which he quotes cannot be taken seriously. It is a "jeu d'esprit", a loosening-up exercise by a young man who had something important to say and succumbed to the temptation to call attention to it by damning his predecessors comprehensively. It is the least satisfactory chapter in an otherwise valuable book.[12]

Had Simon been seriously concerned to discuss what was meant by those who had formulated principles of organization he would have been careful to quote their precise words. Instead he framed a number of simplified propositions of his own, each of which started with the phrase "administrative efficiency is enhanced by", e.g. "limiting the span of control at any point in the hierarchy to a small number".[13] By doing this he turned others' principles, general propositions which had been framed as a guide to action, into laws, statements of a precise and invariable relationship between cause and effect.

To argue verbally with another authority in the same field by translating his ideas into your terms is an ancient pastime. The game of "Aunt Sally" has a long tradition. But it is not a technique of discussion which accords with the highest intellectual traditions.

Anyone who wishes to satisfy himself as to the misleading character of Simon's statement has only to refer, for instance, to the guarded and balanced observations in which Luther Gulick discusses the span of control from the standpoint of a practical administrator.[14] It is perfectly clear that the principle does not possess and has never been expressed with the dogmatic simplicity which Simon attributes to it.

As for the principle that administrative levels should be minimized, that is obvious common sense. Any "level" in organization structure which is not absolutely necessary is a wasteful complication and therefore redundant. The writer has recently discussed elsewhere some illusions as to how hierarchical levels should be regarded and methods by which they can be used constructively instead of as road-blocks on the system of communication.[15]

Chester Barnard, the most authoritative writer to advance the principle of "levels", observes "the line of communication must be as direct or short as possible. . . . The shorter the line the less the error. How important this factor is may be indicated by the remarkable fact that in great complex organizations the number of levels of communication is not much larger than in smaller organizations."[16]

Not only is this so, but in large organizations with long experience of man-management, such as armies, safeguards are provided against the danger that a long hierarchy may create administrative and social "distance". These are of various kinds. But the opportunity of access and appeal to higher authority, despite intervening hierarchical levels established for purposes of organizational, administrative or tactical convenience, operates to humanize authority. It helps to reconcile the necessity for a fairly elaborate formal structure with the realities of informal organization.

Suojanen actually quotes a sentence from Dale which makes this point while at the same time missing the meaning of it. Dale refers to an interview in which General Eisenhower spoke of having "150 battalion commanders reporting to him" in World War II. Dale explains that "what the General had in mind was that accessibility of the chief executive and personal inspiration can make important contributions. Actually the number of people he *supervised* was small, while the number who had access to him was large."[17]

In the British Army in World War I there were officially 11 levels of authority between the citizen soldier and the Cabinet, representing the government elected by a plurality of citizens. But, within this fairly lengthy "chain of command", there were 3 or at the most 4, "key" levels which may perhaps be best described as centres of personal leadership. The highest authority at these levels was expected to know personally all subordinates at lower levels and to give those subordinates opportunity of access.

There is no contradiction except a purely verbal one between the principle of the span of control and the principle that the number of levels in an organization should be kept to as few as is practically possible. Both principles need to be applied in constructing a formal organization.

SUOJANEN develops this misleading antithesis into a further logical contradiction which is even less defensible. He argues that since, as he asserts, the principle of minimizing levels conflicts with the principle of the span of control, the latter must impose limits on the size of any organization. As there is no evidence that "the span of control has ever served to restrict size"[18] the principle itself must be questionable.

If this were so, one would expect that difficulties created by the span of control would be most apparent in large-scale undertakings. But in fact the principle was first developed and applied in armies, the largest form of undertaking for an executive purpose yet developed.

One can only agree with Suojanen that "there is no evidence that the span of control has ever served to restrict size."[20] It is applied most consciously in the largest type of executive organization.

He then proceeds to the statement that "there is no evidence to indicate that the span of control principle has ever been the subject of empirical testing."[19] It depends what he means by "empirical testing". No-one has yet developed a satisfactory laboratory technique to prove that A can conduct conversations with ("communicate with") five persons simultaneously with a reasonable hope of mutual comprehension, but that if the number is raised to eight or ten the prospect of success is less assured. Some practical men might even feel that such tests, even if they were practicable, were labouring the obvious. In any event they are not, within the limits of our present knowledge, practicable.

Suojanen appears to be on firmer ground when he quotes figures from Dale which show that of 100 large business corporations in the U.S.A. with over 5000 employees only 17 had 5 executives or fewer reporting to the President: 47 had ten or more and the median was between 8 and 9.[20] "The companies selected were known to have good organizational practices."[21] Of 44 medium-sized companies (between 500 and 5000 employees) 11 had 5 or fewer executives reporting to the President, 15 more had 6 or 7, and only 8 had 10 or more: the median was between 6 and 7.[22] Here are facts which the student of organization must take into account. Suojanen does not quote the second group of figures which are somewhat less favourable to the case against the span of control as a principle than are those in the first group.

Nor does he quote Dale's own comment "it is important to note that interpretations of the term 'reporting to' made by different companies range from occasional access to the superior to direct and constant supervision. Our findings seem to indicate that instead of close *supervision* by the president of a few executives the trend is towards *access* to him by a considerable number, with more or less intensive supervision by a few."[23]

The principle of the span of control as formulated has nothing to do with *access to* the superior: it is exclusively a principle of formal organization concerned with responsibility for the immediate *supervision* of a subordinate's activities.[24] The question of "access to" is one of informal organization or of granting the right to it formally while making provision to reduce the use of that right to manageable proportions.

Dale was not in a position to analyze closely the relationships involved in the figures from the corporations included in his enquiry. It may well be that some of the subordinates shown as reporting directly to Presidents were "Assistants to" or officials known by other titles in a quasi *general-staff* relationship. Where an executive has *general-staff* assistance he can cope with a much wider span of control without undue strain.[25] Nor was Dale able to draw the distinction between the *nominal* right of direct access to the chief executive and the *frequent use* of that right,[26] nor to learn whether the executives reporting to the president were officials "whose work interlocked": if they were not the principle of the span of control is not applicable.[27]

FOR THESE reasons Dale's figures are by no means conclusive. His own comment shows that they may be subject to very wide tolerances in interpretation. But, even assuming that they represent the situation and that more than half of the larger corporations examined were in fact working with formal organizations which infringed the principle, that would not prove the principle invalid. It might merely demonstrate that a considerable number of American corporations were disinclined to emphasize the importance of formal organization.

This is certainly so in the case of Sears Roebuck whose advocacy of a "flat" set-up has been widely quoted. Sears are undoubtedly a "blue chip" corporation as regards overall management. But at the time (1953) when I discussed the question with Mr. James Worthy, it was clear that they were half-hearted about the importance of formal organization. "We do not use organization charts internally," he said; "we keep a set to show to visitors." Obviously there was a fear that too much definition of functions would undermine the "good feeling" on which informal organization is built up.

THIS attitude was by no means uncommon among American business undertakings at that time, though in other ways they might be well managed. A representative of the Chrysler Corporation stated in the same year that they had no organization chart and that it was contrary to the corporation's policy to suggest introducing one. A later conversation with a Chrysler executive (1956) indicated that this policy has been changed.

Acceptance of the need for precise and comprehensive definition of the duties, responsibilities, authority and relationships of higher executives is one of the last features of scientific management which many business undertakings in all countries are prepared to introduce. It invokes "a complete mental revolution"[28] on the part, not of the operators whose behaviour can be influenced, but of leading executives who have to generate their own conviction.

There are still numerous corporations which genuinely prefer a relatively undefined structure. But they usually have to pay a price in disputes about authority and competence.

Suojanen's further comments on Dale's figures indicate that he does not understand two of the basic principles of formal organization. Quoting Sune Carlson on Swedish experience he states that "in so far as the presidents of corporations . . . spend only part of their available time inside the organization their span of control is understated." Again he argues that where members of the organization "do not report directly to executives but have access to him, the span of control of the executive in question may again be understated."[29]

As already pointed out the span of control is a principle of *formal* organization.[30] It is not a loose phrase to cover anything which an executive may have to do. It is precisely because the load on high executives of outside contacts and of those within the organization who should have access to them is increasing that it is necessary that their internal administration should be streamlined. They must limit the number of those for whose direct supervision they are responsible.

His next point is even more misleading. Pointing out that in six of the corporations included by Dale only one executive reports to the President, and that "the procedural executory plan" is the responsibility of this subordinate, he suggests that "if the supreme coordinating authority of the organization can be segmented doubts are raised as to the operational validity of another basic principle of organization theory, that of the principle of 'unity of command'."[31]

This is sheer Lancelot Gobbo . . . "I will try confusions with him."[32] The importance of distinguishing between planning and performance is a principle as old as Scientific Management. F. W. Taylor himself stated it with reference to manufacturing departments.[33] The awkward phrase "the procedural executory *plan*" does not alter the plain fact that in such arrangements the President is responsible for overall policy formulation and planning while an Executive Vice-President is made responsible to him for operation.

THE SUPREME co-ordinating authority of the organization is *not* segmented. It remains with the President. The fact that the official charged with operation is called his "subordinate" defines this. Any executive may delegate any portion of his responsibility to a subordinate. He still remains "the supreme co-ordinating authority" within the area of his overall responsibility. The responsibility of a superior for the acts of his subordinates is absolute. Suojanen then turns to the analogy from military experience. He points out, perfectly correctly, that in time of peace the mission of an army is in abeyance. It has no organizational objective. It is merely rehearsing. Because of this, it is apt to surrender to the "political" and personal pressures which tempt men to deviate from the line of maximum effectiveness in organization. He actually quotes a passage from Major-General Otto L. Nelson which describes the process, but again, as in the case of his quotation from Dale, without, apparently, appreciating its significance.

GENERAL NELSON recites the doctrine of the U.S. Army on the subject: "In military organizations it has been determined by experience that the maximum number of subordinates a commander can deal with, personally supervise and control is limited. As the administrative functions and brainwork of the commander increase and as the functions of command become more numerous and of broader scale, the number of subordinates with whom he has to deal directly should decrease."[34] He adds "This tendency is tenaciously resisted by a proclivity that can be designated as "pride of place" for lack of a better term."[35]

He continues, and Suojanen quotes him, " 'Pride of place' has usually won out in time of peace resulting in far more individuals reporting to one man than he could control. Where there are ambitious subordinates, soft-hearted commanders and complaisance characteristic of peace-time, 'pride of place' flourishes. The awakening always comes but usually not until war or other emergency threatens. Then serious incidents in the form of grave errors, neglects or delays forcibly remind commanders of the limitations imposed on them by 'span of control'."[36]

Suojanen's comment on this reads "Pride of place as defined above is but the peace-time equivalent of the wartime span of control."[37]

But, he does *not* quote General Nelson's definition of the "proclivity" which he describes as 'pride of place'. "It includes all those forces which have persistently tended to prevent a lengthening of the chain of command in the Army and War Department and even to shorten it. Both senior and junior officers are generally impatient of delays incident to going through channels. Juniors whenever possible like to deal directly with the highest authority. Officers heading organizational entities resent being placed far down in the chain of command. In all sorts of ways 'pride of place' exerts a dynamic force and it is a rare organizational entity in the War Department and the Army, the chief of which, if given the opportunity, does not try to climb higher on the organizational ladder."[38]

In other words an army in peace time, because it becomes a bureaucracy lacking the continuous test of reality, is inclined to abandon principles of organization which it knows to be the soundest and most effective under "political" pressures of all kinds. These are generated by personal ambition, impatience with proper procedure, organizational "empire-building", and status hunting. Suojanen recommends that business enterprises should follow this example!

THAT the special strains imposed on an army at war are the reasons why armies recognize the span of control as a sound principle of organization is not true. Armies, whether in peace or at war, accept the principle and frame their organization plans accordingly. They sometimes deviate from it in peace time under the pressures enumerated by Major General Nelson. This is merely an example of the constant tendency of human beings to subordinate organization objectives to secondary, and often personal or 'political', considerations. To borrow Suojanen's own analogy, firemen forget that they exist to fight fires; they become more interested in playing pinochle.

In fact these deviations almost always occur in the high echelons where soldiers in time of peace are most subject to the "politics" and "personalities" characteristic of governmental administration.[39] Whether in peace or war, in planning the organization of their operating units, armies adhere strictly to the principle.

But while Suojanen's ideas about armies are questionable, it is the views about competitive business which his statements imply which are most astonishing. We learn that there is a sharp contrast between "the nature of the mission of the military organization" and that "of the organization in which most of the elements of the substantive plan unfold as a result of deliberate planning internally generated rather than being dependent upon the unknown plans of an unknown enemy. The significant element here is that planning possesses a far higher degree to predictability within the framework of a supreme co-ordinating authority than when two or more organizations, each with its own co-ordinating authority, confront each other as opponents."[40]

The greatest authority since Napoleon who has discussed the theory of war would certainly not have agreed with Suojanen about the contrast.[41]

An American authority, not a soldier, has suggested quite recently that armies are ahead of other forms of organization in their theory of administration.[42]

Nor does it seem probable that the majority of business executives operating in a competitive market would agree that their plans were as free from outside interference or possess the degree of predictability suggested. They are certainly "confronting as opponents two or more organizations each with its own co-ordinating authority", viz. the enterprises in direct competition with them. And in a very real sense they are dependent on "the unknown plans of an unknown" quantity. It would be misleading to describe the consumer as an "enemy". But he is totally indifferent to the effect of his choices on any particular business enterprise. And those choices, dependent on such factors as fashion, price, technological change, cultural development and so on, are quite as difficult to predict accurately as the probable plans of a nation which may become the enemy of another. Many business undertakings have suffered their own private "Pearl Harbour".

More are likely to do so if they follow Suojanen's reasoning. "The element of uncertainty", we learn, "in military operations is much greater than it is in civil operations. . . . The large-scale, non-military organization can reduce most of its operations to a routine requiring a minimum of detailed direction."[43]

The late Professor Alfred North Whitehead wrote some wise words on the subject of routine:—

> "Once a system has been formulated, it soon settles down into a routine, which is 'the god of every social system' . . . the seventh heaven of business, the essential component in the success of every factory, the ideal of every statesman. . . . When the routine is perfect, understanding is only necessary in minor flashes. But *since routine has inherent limitations, foresight is required.*"[44]

The business that relies on "reducing most of its operations to a routine" is inviting the onset of the disease which is the greatest hazard of all established enterprises—fatty degeneration of initiative, sometimes described as "middle-aged spread". It is denying the dynamic force which is at the root of all new business getting and all new product development—the entrepreneurial spirit. It is, in short, ceasing to be an enterprise and becoming merely a system of administration.

The true contrast is not, as Suojanen suggests, between an army in war and "the large-scale non-military organization". It is between any organization which is merely preparing for action, and is not continuously able to submit its plans to the test of results, for instance an army in peace, and any organization which in addition to planning for five and ten years ahead must confront reality hourly, daily and yearly as a condition of survival, as must, for instance, a competitive business or an army in war.

What alternative does Suojanen offer to concepts of formal organization? One of the difficulties in his exposition of "the role of the primary group" has already been discussed. What, in fact, he appears to have done is to "rediscover" Bernard's discussion of the role of "informal organizations"[45] and then to assume an identity between "the tendency of people to become members of informal groups" and the requirements of formal organization which is seldom, if ever, completely realized in practice. In short, he has constructed his own private Utopia.

When he says that the "successful leader" is one who recognizes the tendency to informal organization and "utilizes it",[46] he is perfectly correct. Authority, "the formal right to require action of others", only develops into power, "the ability to make things happen", in so far as authority is accepted. And the degree to which authority is accepted depends on the skill with which the individual in a position of formal authority creates an indentity between the objective of the undertaking coupled with the methods adopted to pursue that objective and the sentiments of the group as a whole. These sentiments are greatly influenced by informal organization. Power, in fact, never grows out of formal authority. It is added to it by successful leadership.

But while Suojanen discusses the "successful leader" and his role, he is in fact opposed to the idea of the individual leader. He favours an abstraction, which he calls "the leadership", exercised by a group. A group, a committee, can never lead. And this for a quite simple reason. Leadership involves a personal relation between an individual, who *represents* the objective of the undertaking and *interprets* the measures taken to attain it, and each individual participant in the group.

No individual can have an identifiable or consistent personal relationship with the heterogeneous members of a group.

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In so far as a group or committee can be said to possess a personality, it is a multiple personality, as unidentifiable as a composite photograph and as variable as the sum of all the moods of all the members. The individual participant will love and admire one member, admire a second without loving him, love a third without admiring him, and so on. There is no single channel through which the participant can focus his sentiments and thus give them emotional drive. Abstractions such as "the corporation" and "the objective" remain to him abstractions, "without a soul to be damned or a body to be kicked", at the mercy of any personal or social influence which can come closer to his heart.

THUS when Suojanen discusses characteristics of informal organization, or as he calls it "the primary group", he becomes unrealistic. He says that "the nature of communication within the group becomes deep and extensive to the point that the unit organization can be said to behave as a single person."[47] This goes much farther than the facts warrant. He cites the family as "the basic unit organization of society".[48] He adds that "household decisions are made by various members singly or are joint decisions".[49]

The family, however, is not a group of adults. When it becomes so, it usually breaks up into separate households. Where this does not occur it can seldom "be said to behave as a single person." The families which are most successful as families are usually those in which most of the decisions affecting the household are, in fact, made by one person. They may well include the decision to leave a considerable measure of autonomy on matters concerning their own development to individual members of the group . . . as a means to assisting that development.

But the existence of formal organization in business does not imply that authority should be exercised autocratically, that leadership should be confused with domination. There is plenty of evidence that the growing concern for "executive development" is influencing many business leaders towards a deeper appreciation of the value of allowing subordinates to "make their own mistakes". The prevalence of teen-age crime suggests that the family is not a very happy analogy on which to base a theory of business organization.

His analysis of the effect of growth on the "unit organization" is also out of touch with the facts. He writes that growth results in an increase in "the 'nest of Chinese blocks', or unit organizations that constitute the formal organization."[50] And he assumes that the membership of the unit organizations will become increasingly specialized by:—

a. Recruitment of like-minded people with a common or similar education.

b. Educational efforts by the organization.

But, in fact, growth may have exactly the opposite effect. Suojanen apparently realizes this. He promises a further contribution on what he describes as "substantive decentralization". He suggests that in competitive business the efficiency of a decentralized division will be measured by making it a "profit centre" and in a non-profit making undertaking by performance budgeting.[51]

The direct effect, however, of holding a decentralized division responsible either for its own profit or for its own performance is to create a subordinate centre of co-ordination. And one of the major problems in modern large-scale organization is to protect decentralized divisions so that they can operate as co-ordinated units against the pressures of specialized higher authority for a degree of attention to a particular aspect of operation which will throw them out of balance.

IN SHORT, there is a cuckoo in Suojanen's "nest of Chinese blocks". And that cuckoo is decentralization coupled with a top organization which is specialized. To whom is the co-ordinator of a decentralized division to be responsible, to a higher co-ordinator, say to the President or to an Executive Vice-President, or to all the various specialized Vice-Presidents? If the answer is "to the latter", that means that the task of co-ordinating the various essential specializations is thrown downwards onto the shoulders of an official of lower status than those whose interests he is required to co-ordinate. This is placing an unreasonable burden on the subordinate and, in fact, never works well. If the reply is "the former", how are the President or the Executive Vice-President to co-ordinate all the decentralized divisions and all the specialists at headquarters without either setting themselves an unworkably complex pattern of communications or devoting so much time to the formalities of administration that they have no time for leadership?

CHAPTER MEMBERSHIP STANDINGS

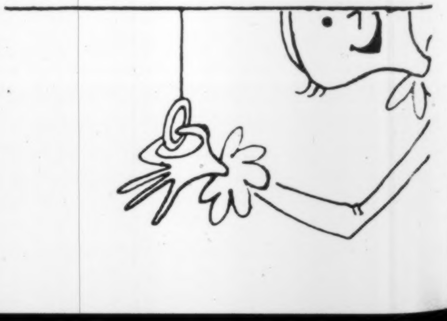
as of October 1, 1956

New York	401	Dayton	76
Philadelphia	380	Georgia	75
N. New Jersey	349	Columbus	70
Cincinnati	307	Richmond	69
Lancaster	280	Greenville	66
Chicago	270	Reading	66
Cleveland	266	Puerto Rico	64
Pittsburgh	244	Clearing	63
Washington	202	Alabama	62
Detroit	196	Tr. Del. Valley	60
Boston	191	Hartford	59
San Francisco	173	Central Pa.	55
Milwaukee	164	Calumet	52
Dallas	149	Western Mass.	51
Los Angeles	146	Central N. Y.	48
Montreal	122	Charlotte	47
Worcester	122	Twin City	47
Western N. C.	121	Fox Valley	45
Hudson Valley	119	Madison	40
Indianapolis	115	Lehigh Valley	38
Raritan Valley	115	North Miss.	36
Binghamton	107	New Orleans	35
Long Island	106	St. Louis	35
New Haven	100	London, Ont.	34
Baltimore	99	Nashville	33
Kansas City	99	N. E. Penna.	32
Sacramento	99	Athens	30
Greensboro	97	Portland	29
Wilmington	84	Westchester	26
Bridgeport	78	Louisville	15
Providence	78	Stamford	12
Knoxville	77	Non-Chapter	93
N. Alabama	77	Non-Resident	91

CHAPTER PERFORMANCE AWARDS REPORT

July 1, 1956 - August 31, 1956

Lancaster	2341	Detroit	1308
Providence	2296	Boston	1306
Georgia	2291	Clearing	1120
Hudson Valley	2255	Pittsburgh	1082
New Haven	2046	Chardotte	1055
Raritan Valley	2044	Dallas	964
Greensboro	2028	Sacramento	790
Nashville	2020	Madison	782
Northeast, Pa.	2016	Montreal	781
Bridgeport	1993	Athens	625
Northern N. J.	1982	San Francisco	591
Milwaukee	1950	New Orleans	552
Greenville	1922	No. Alabama	400
Baltimore	1894	Philadelphia	310
Portland	1874	West. Mass.	308
Wilmington	1818	Calumet	
Cleveland	1813	Central N. Y.	
Alabama	1796	Central Pa.	
Knoxville	1786	Cincinnati	
Chicago	1778	Columbus	
Hartford	1718	Dayton	
Washington	1646	Fox Valley	
Western N. C.	1599	Indianapolis	
Binghamton	1497	Lehigh Valley	
Richmond	1495	London	
Tren.-Del. Val.	1465	Long Island	
Reading	1448	Louisville	
Twin City	1410	New York	
Kansas City	1384	No. Mississippi	
Worcester	1340	Puerto Rico	
Los Angeles	1331	St. Louis	
		Stamford	



Suojanen appears to have blinded himself to this problem by confusing the use of an epithet with the reality which it implies. He leaps straight from a discussion of the unit organization, which may well be composed of like-minded persons who constitute a primary group, to the assumption that the top group in any organization is, or that it can become, a primary group.

That all depends on how it is organized formally, what are the duties and responsibilities of the individual members. When Suojanen writes that "the role of the chief executive becomes . . (to) co-ordinate the efforts of the co-ordinating group"[52] he is assuming that each member of the top group regards the maintenance of co-ordination as his first responsibility.

That differs directly from the form of organization at present found in the majority of American business undertakings, in which the individuals forming the group immediately responsible to the chief executive have, almost invariably, each a particular function, i.e. they are specialists. No man can be at the same time a specialist and a co-ordinator of other types of specialists. It is in the most extreme sense calling upon him to "serve two masters". How is he to decide, in any particular instance, where his duty lies, whether he should maintain a method which makes for economy in, say, manufacture, which is his personal responsibility, or subordinate the interests of manufacturing to the assumed requirements of the group for more and more varied products, in order to secure co-ordination?

SUCH difficulties are not imaginary. Such instances recur daily in hundreds of organizations. A recent article in a popular journal reads:

> *"We've refused to recognize or admit that the various components of our industrial machine are driven by different people with different motives. Sales, for example, is always looking for something to add to the product in order to gain competitive advantage. . . . Sales presses for changes to get an edge over competitors. Engineering wants changes too, but for an entirely different reason. They're always fighting for easier, cheaper production. Where Sales wants to add to the product, Engineering wants to simplify it. Production has a totally different idea. They know that their salvation lies in keeping the men at the machines doing the same thing over and over again. Any production man will tell you how and why repetitive work is the secret of mass production. And he'll fight changes at the drop of a suggestion.*
>
> *Thus we have three major divisions of one business looking at the same product from three conflicting points of view. Each of them tries to impress on top management that its contribution is the most important and in the process it pushes under the rug anything that might lower its own status, and slyly points up the faults of its 'competitors'.*
>
> *Is it any wonder that we have friction? And, mind you, this friction exists when people are working together with the best intentions."*[53]

Suojanen merely by applying the epithet *co-ordinating* to the top group, ignores these difficulties completely. He labels it a *co-ordinating* group and therefore, he argues, its members will behave like good fairies and not as men and women have behaved throughout history.

Indeed in his anxiety to make his case against the "span of control" he is curiously revealing in his language. We read "if the executive group is small and composed of congenial and like-minded persons it can be said to function as the alter ego of the chief executive".[54] And again "this is the *alter ego* concept of the executive group".[55]

THE ONLY form of organization which has been successful in institutionalizing an executive group that really functions as the "alter ego" of its chief is the military with the device of the General Staff. Suojanen admits as much—"the concept of the executive group as the supreme co-ordinating authority of the large organization is best embodied in the General Staff concept."[56] With the possible exception of President Eisenhower's staff—and the President was trained as a soldier—the instances in which the *General* Staff concept has been applied successfully in civilian forms of organization are extremely rare. In business, embryonic attempts to develop similar relationships have become a storm-centre of controversy. "The issue between the proponents and opponents of the 'assistant to' is sharply drawn."[57]

Has Suojanen never asked himself why this device has been successful in armies and has hitherto been so little used in other spheres? The answer is simple. Armies are disciplined bodies of people with centuries of experience of large-scale organization—almost as many centuries as business has had years. They have learned to appreciate two things:

1. The vital importance of the principles of formal organization, such principles as "the separation of planning from performance" (if more resounding terms are required of policy-formulation and long-period forward planning from operating), "unity of command", strict adherence to the "chain of command", "the span of control" and so on.
2. That if these principles are enforced and everyone has confidence in them so that officers, whatever their status, find it difficult to "get away with unprincipled conduct", leaders are at all levels much freer than in civil organizations to devote themselves to these aspects of their duties from which sound informal organization and consequently high morale develop.

For example, strict insistence on "unity of command" and adherence to "the chain of command" reconciles the claims of specialization and integration. Suojanen cites these principles as one of the "paradoxes" of organization theory. But, as with the principles of "the span of control" and "the minimum number of levels", the alleged conflict is purely verbal.

In all forms of human co-operation people have to be dealt with at two levels—as individuals and as members of an organized group. The principle of specialization is a principle applicable to the activities assigned to an individual. It asserts that the greatest economy of *individual* effort will result from specializing the work assigned to each person. It was so stated by F. W. Taylor.[58] But the principle of integration applies to the arrangement and correlation of the different groups of tasks assigned to different individuals: it is concerned with the *relationships between* individuals not with their *duties as individuals.* It is, in fact, the purpose of organization *per se,* and was so stated by Mooney and Reiley.[59]

CONFUSION between them has been caused by confused thinking. It has been assumed that because the *tasks* assigned to individuals should be specialized, *authority over* other individuals should also be specialized. But this introduces duplication in the "chain of command". If a specialist at level A has any formal authority over an individual specializing in the same subject at level B, and level B is also a subordinate centre of co-ordination, one of two things is bound to happen:—

a. Either the individual responsible for co-ordination at level B will find his formal authority over his subordinates at level B divided; or one of his specialists will be receiving authenticated communications from two sources, from his specialist superior at level A and from his immediate superior responsible for co-ordinating his work at level B, and/or

b. The individual responsible for co-ordination at level B will find that he is trying to serve two or more masters . . . various specialists at level A, and the person at level A who is directly responsible for the work of his decentralized division.

In neither circumstance will he find it possible to fulfil his role as the leader of a subordinate centre of co-ordination adequately.

While there is no conflict between the principle of specializing individual tasks and the principle of integration, there is a direct conflict between the idea of specialized authority and the principle of decentralization. To borrow a phrase from Suojanen "it can be stated almost categorically" that the vast majority of the disputes over authority and competence which have occurred in American business undertakings over the last half-century have centred round this one point.

Armies because of their emphasis on "unity of command" and "the chain of command" are almost entirely free from this particular source of friction. It never occurs to any type of specialist ("Special Staff Officer"), however lofty his status (rank), that he has the remotest right to issue orders to any person not under his direct command, not even to members of his own specialized corps if they are, for the time being, under command of a subordinate officer who is responsible to someone else.

His advice and any instructions he may wish to issue invariably travel in one direction and in one direction only . . . *upwards*, to the superior officer responsible for co-ordination at the level in which the specialist is serving. It is that officer's function to transmit even specialized instructions *downwards* to subordinate centres of co-ordination. By this device specialized advice and supervision are always incorporated into "the chain of command" before passing downwards and the "unity of command" is preserved. All specialized contributions are received by those in charge of subordinate centres of co-ordination as the instructions or advice of their direct superior. That superior is responsible that they are correctly co-ordinated into the overall plan and do not disturb more urgent priorities *before* passing them downwards, and also for adjusting any difficulties in focussing effort on the overall objective which they may cause for those in charge of subordinate co-ordinating centres.

This insistence that all specialized advice and supervision pass upwards and thus be incorporated in "the chain of command" *before* reaching those in charge of subordinate centres of co-ordination would, with the growth of specialization in modern armies, have laid upon commanders an intolerable burden of detailed co-ordinary work were it not for evolution of the concept of General Staff.

A *general*, as opposed to a *special*, staff officer is an officer, specially selected and trained, who assists a commander with *his* functions of command, and especially with the minutiae of co-ordination.

As I have explained elsewhere:—

a. This system does relieve commanders of an enormous amount of detailed administration and anticipates difficulties of co-ordination instead of leaving them to be cleared up *after* orders or instructions have been issued and the emotions of senior officers have become engaged on some issue.

b. Wise commanders use the time thus placed at their disposal to cultivate close personal relations with their immediate subordinates, both specialist and "line". They convince them that they have constant and easy "access to" them, but that this is not to be used to discuss administrative detail and thus to handicap the smooth working of the "*general* staff" system.[60]

A Commander can by this *general* staff device greatly widen his *nominal* span of control, as pointed out by Major General Otto Nelson[61] and yet have much more time to devote to the real business of leadership. But he can only do so provided that:—

i. He limits very strictly his *effective* span of control.

ii. He himself observes carefully and insists that those under his command observe carefully the principles of "unity of command" and the "chain of command".

iii. It is clearly understood that senior specialists have no authority downwards: their advice and authority must move upwards and be incorporated in the "chain of command": that they are "on tap and not on top".

In short, he and all under his command must adhere closely to those "principles of organization" which students of management have been isolating over the last half century, many of them from close examination of and practical acquaintance with military experience. A Chief of the Staff or a Commander and their General Staff come closer to Suojanen's concept of an executive group as the supreme co-ordinating authority in a large-scale organization than any other example known to the writer. But they do so and are able to do so because they observe principles of formal organization, not by quarreling with them. In his brilliant book, *The Practices of Management*, Peter Drucker insists that:

> "*The best practices will fail to build the right spirit unless management bears witness for its own beliefs every time it appoints a man to a management job. The final proof of its sincerity and seriousness is uncompromising on* integrity *of character.*"[62]

In arranging the structure of any great undertaking well-founded principles of organization and strict adherence to them are the institutional equivalent of integrity of character in the individual manager.

On what general grounds then does Suojanen call them in question? His statements on the subject read:—

> "*The theory of organization that has developed has not been built round any general frame of reference but has rather emerged as a series of principles of administration. Many of these principles contradict each other and have never been verified in any empirical way.*"[63]
>
> *and*
>
> "*Despite the arguments of organization theorists there is as yet no integrated body of theory because the "sciences" of organization and administration can be approached from any number of directions. Even a preliminary survey of the literature would require an extensive exploration and integration of such varied areas as anthropology, business administration, economics, education, history, law, philosophy, political science, psychology and sociology. Such a task is beyond the 'span of control' of any one individual.*"[64]

Putting these two statements together they cancel each other out. The theory of organization has not been built round any general frame of reference because the construction of such a frame of reference demands so wide a knowledge of so many diverse disciplines as to be humanly impossible. So what?

Perhaps the most conclusive answer to this type of conundrum was given by the Spanish Philosopher, the late Ortega y Gasset:—

> *"Life cannot wait until the sciences may have explained the universe scientifically. We cannot put off living until we are ready. The most salient characteristic of life is its coerciveness: it is always urgent, 'here and now', without any possible postponement. . . . If the physicist had to live by the ideas of his science, you may rest assured that he would not be so finicky as to wait for some other investigator to complete his research a century or so later. He would renounce the hope of a complete scientific solution, and fill in, with approximate or probable anticipations, what the rigorous corpus of physical doctrine lacks at present, and in part, always will lack."*[65]

The body of knowledge described as Management is concerned with the activity known as managing. Managing is essentially a practical art. It was practised for many centuries before any person suggested that it was possible to build up a body of knowledge about it which could be arranged systematically and taught and learned.

It was not till the beginning of this century that the American engineer, Frederick Winslow Taylor, first suggested the possibility of building up such a body of knowledge. Immense enthusiasm and large resources have been devoted to the subject, especially in the United States: there are currently 175 major American universities with faculties devoted to research and teaching in this field. But a bare half-century is a very brief period for a new branch of human learning to settle down and to establish its position as an acknowledged part of the social heritage. No serious student of management would claim that its terminology had yet matured or that the organization of its material was other than provisional.

Whether this new body of knowledge should be termed *a science* or *scientific* is a matter of personal taste. It all depends on which of the two well-accredited meanings of these terms the individual wishes to emphasize. Thus *science* may mean "the kind of knowledge or intellectual activity of which the 'sciences' are examples," the "Sciences" in this sense often being used only of "Natural and Physical Science". But it may also be used of "A particular branch of knowledge or study, acquaintance with or mastery of any department of learning, trained skill".

Similarly the epithet *scientific* may mean "of or pertaining to science or the sciences; of the nature of science". But it can also be used "of an art, practice, operation or method: based upon or regulated by science, as opposed to mere traditional rules or empirical dexterity."[66]

What is perfectly clear and a matter of history is that Frederick Winslow Taylor in using the phrase *scientific management* was employing the epithet *scientific* in the second meaning.

Within his own lifetime he was attacked by academic people who, emphasizing the alternative meaning of the term *scientific*, were irritated at its use as applied to a body of knowledge which did not satisfy certain criteria which were implied but never clearly stated. Taylor's answer defined the meaning in which he had used the term:

> *"A very serious objection has been made to the use of the word 'science' in this connection. I am much amused to find that this objection comes chiefly from the professors of this country. . . . President McLaurin, of the Institute of Technology of Boston recently defined the word Science as 'classified or organized knowledge of any kind'. And surely the gathering in of knowledge which . . . has existed, but was in an unclassified condition in the minds of the workmen, and then the reducing of this knowledge to laws and rules and formulae, certainly represents the organization and classification of knowledge, even though it may not suit the convenience of some people to have it called science."*[67]

The study of organization and administration are parts of the body of knowledge described as management. When Suojanen writes of "the 'scientific management' movement" and of "the 'sciences' of organization and administration", placing the words *scientific* and *science* in inverted commas he is merely repeating this hoary criticism which Taylor answered so conclusively over forty years ago.

No responsible person has ever claimed that management is a *science* or *scientific* in the same sense as are physics or mathematics. And this for a quite simple reason. No body of knowledge bearing on a practical art can develop faster than the underlying disciplines on which it is based. Its degree of precision will be the degree to which those underlying disciplines are exact.

This limitation all authoritative students of Management accept. They recognize that until the basic disciplines underlying the art of managing have reached a much greater degree of precision, exact knowledge is beyond their reach. In y Gasset's words "they must fill in with approximate or probable anticipations what the rigorous corpus of (biological) doctrine lacks at present, and in part always will lack." It is to these "approximate or probable anticipations" that they apply the term "principle".

Suojanen suggests that these "principles contradict each other and have never been verified in any empirical way". The question of their suggested contradictions has already been discussed. His description of "organization theory as a compound of so many paradoxes" is an example of the "academic fallacy", the tendency to argue from a purely verbal logic, unsupported by any refinement of semantic definition, instead of from the facts of life. On this basis it is possible to argue that christian ethics are paradoxical because the prescription "thou shalt love thy neighbour as thyself" excludes that neighbour's wife. Thy neighbour's wife is unquestionably "thy neighbour".

The principles cannot be verified by repeated experiment yielding a constant result because our knowledge of individual and group behaviour and our techniques of investigation are at present insufficient to enable us to reproduce a group situation with any accuracy. It would be more to the point if, instead of generalizing about "empirical verification", Suojanen would suggest a technique by which group behaviour can be verified without encountering the difficulty so clearly brought out by the Hawthorne experiments of identifying a particular behavioural change as due to a particular alteration in the situation.

The principles of organization can be verified but not by laboratory techniques. They can be verified by careful accumulation of actual "cases" and the recording and measuring of the effects of change. Admittedly insufficient work of this kind has been published bearing on problems of organization, largely because few organizational changes take place without somebody's dignity suffering. Ordinary human kindliness prompts everyone concerned to gloss over awkward facts and to do their utmost to present the circumstances in a form which, however little resemblance it may bear to the realities of the situation, permits those adversely affected to "save face".

Nevertheless "principles" have been isolated and have proved useful. They are the deposit of what is called in medicine "clinical experience". Admit-ting that "every situation is different", just as in medicine every patient is different, it is possible to arrive at certain generalizations which can be applied to any case and which are valuable guides to diagnosis. As has been pointed out quite recently "management consulting firms find their knowledges and skills applicable in the department store, on the one hand, and in the government bureau or the university on the other. . . . As theorists we have not yet established generalized concepts which keep pace with the facts of contemporary administration."[68]

Moreover, the limitations under which Management suffers because Psychology, for instance, is not yet an exact discipline apply to a range of other fields of knowledge, particularly the social sciences. It is noteworthy that Suojanen does not use inverted commas in referring to these disciplines. On the contrary it is his central thesis that "advances in those social sciences that relate directly to administrative theory" have rendered the principle of the span of control "no longer valid". But his article is singularly innocent of practical evidence, as distinct from verbal argument, that this is so. Is it possible that "the primary group concept" as applied to the top groups in large-scale organizations has not yet "been verified in any empirical way"?

It is pertinent to enquire why a thinker of Suojanen's manifest sincerity and erudition has involved himself in such a confused attack on the work of men whom he should regard as collaborators rather than opponents? There are three possible explanations.

The first is that Suojanen, like Simon in his chapter on "Some Problems of Administrative Theory", has succumbed to youthful exhuberance.[69]

The second is to be found in his observation that the study "of organization and administration can be approached from any number of directions", followed by a long list of the disciplines whose literature should be explored as a preliminary. This is again the "academic fallacy", the false scientism previously noted. It is the idea that knowledge about managing should derive from literature rather than from direct observation of life.

Management being the body of knowledge about the practical art of managing can be approached from one direction and one direction only, does a particular fact, a specific principle help managers to manage better? Obviously it cannot help them to do so if it does not accord with reality, if it is untrue. But the evidence of its inaccuracy does not lie in a verbal logic or in proving at length what every serious student of the subject already knows, that our system of thought about management is as yet incomplete, that Management is not an exact science. As a discipline Management is concerned with the executive aspect of human government. And government is not yet an exact science, despite the term *Political Science*. It is better described in the title used by a British author—"The Endless Adventure".[70]

S.A.M. MEETING DATES 1956-1957

Board of Directors Meeting—October 27, 1956

Executive Committee Meeting—February 16, 1957

Board of Directors Meeting—April 27, 1957

Executive Committee and Board of Directors Meeting—June 15, 1957

The evidence of inaccuracy is impracticality, that a principle or concept tested against reality does not work. Suojanen has produced no evidence to prove that the "span of control" or other principles of formal organization when properly applied do not work, only evidence that some corporations manage to "get along" without applying them. Up to 1900 all business undertakings managed to "get along" without any use of Management in its modern sense. But it does not follow from this that Management concepts are ill-conceived or useless.

The burden of proof is not on Management, to show that each of its concepts accord with all the theories advanced by the social sciences. The burden of proof is on the social sciences to show that they have concepts and theories which can be of value to those carrying practical responsibilities. Management in this matter resembles medicine. Being the body of knowledge about a practical art, its primary concern is not with the logic of any theory, but with the practice.

The third reason is that Suojanen is over-impressed with the experience of those forms of organization whose objectives are "political" rather than executive. He says "the leadership in the sociological aspects of organization has remained with the non-profit organization".[71] His constant insistence on predictability as the basis of co-ordination and his rejection of any analogy with military organization in war because of "the greater element of uncertainty" all point in the same direction. He is looking at the problem of organization, not in the round, but from one particular angle only . . . the angle which is concerned not with attaining the objective but with keeping the participants happy. He is writing as a sociologist rather than as a student of business administration.

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ting that "every situation is different", just as in medicine every patient is different, it is possible to arrive at certain generalizations which can be applied to any case and which are valuable guides to diagnosis. As has been pointed out quite recently "management consulting firms find their knowledges and skills applicable in the department store, on the one hand, and in the government bureau or the university on the other. . . . As theorists we have not yet established generalized concepts which keep pace with the facts of contemporary administration."[68]

MOREOVER, the limitations under which Management suffers because Psychology, for instance, is not yet an exact discipline apply to a range of other fields of knowledge, particularly the social sciences. It is noteworthy that Suojanen does not use inverted commas in referring to these disciplines. On the contrary it is his central thesis that "advances in those social sciences that relate directly to administrative theory" have rendered the principle of the span of control "no longer valid". But his article is singularly innocent of practical evidence, as distinct from verbal argument, that this is so. Is it possible that "the primary group concept" as applied to the top groups in large-scale organizations has not yet "been verified in any empirical way"?

It is pertinent to enquire why a thinker of Suojanen's manifest sincerity and erudition has involved himself in such a confused attack on the work of men whom he should regard as collaborators rather than opponents? There are three possible explanations.

The first is that Suojanen, like Simon in his chapter on "Some Problems of Administrative Theory", has succumbed to youthful exhuberance.[69]

The second is to be found in his observation that the study "of organization and administration can be approached from any number of directions", followed by a long list of the disciplines whose literature should be explored as a preliminary. This is again the "academic fallacy", the false scientism previously noted. It is the idea that knowledge about managing should derive from literature rather than from direct observation of life.

Management being the body of knowledge about the practical art of managing can be approached from one direction and one direction only, does a particular fact, a specific principle help managers to manage better? Obviously it cannot help them to do so if it does not accord with reality, if it is untrue. But the evidence of its inaccuracy does not lie in a verbal logic or in proving at length what every serious student of the subject already knows, that our system of thought about management is as yet incomplete, that Management is not an exact science. As a discipline Management is concerned with the executive aspect of human government. And government is not yet an exact science, despite the term *Political Science*. It is better described in the title used by a British author—"The Endless Adventure".[70]

S.A.M. MEETING DATES
1956-1957

Board of Directors Meeting—
October 27, 1956

Executive Committee Meeting—
February 16, 1957

Board of Directors Meeting—
April 27, 1957

Executive Committee and
Board of Directors Meeting—
June 15, 1957

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This paper was written as a Foreword to a Japanese edition of the writings of Frederick W. Taylor. What the author has to say here seems of universal importance, therefore of interest to the readers of this magazine, hence its appearance in these pages.

The Future Of Collective Bargaining As Related To Scientific Management

by Morris Llewellyn Cooke
Chestnut Hill, Pa.

FOR those of us who watch with keen interest the revamping of Japanese life under post war conditions this publication of the more significant writings of Frederick Winslow Taylor appears to be highly significant. The so-called Father of Scientific Management was born in 1856. He was hardly out of his teens before he began the development of his revolutionary scheme for industrial production. So it has been eighty years in the making and under world wide scrutiny for two generations. As industrial development becomes more and more the hallmark of national arrival, to have available these now commonly accepted bases for industrial production—the result of genuinely scientific inquiry — constitutes a very real contribution.

Japan, of course, is no stranger to an intensive industrial effort. But the conditions of life in the country being what they have become under pre-war, war and post-war influences, all industry over the nation must necessarily be put under a new and searching inquiry.

Because I believe Japan may easily waste time in being too gradual in traversing the ground between to-day's practice and tomorrow's realization under Scientific Management, I am offering some thoughts on collective bargaining as practiced today with some suggestions as to possible future development.

As far as I know Scientific Management as such has never made any specific pronouncement in regard to the field and function of the grouped employees, or more specifically as to labor unions, just as no definite position has been taken as to the *raison d'etres* of associations of employers. In Scientific Management literature, as I recall it, the existence of labor unions and manufacturers' associations have at best been assumed rather than mentioned. In their discussion of Scientific Management techniques and policies neither group has assumed to have any legitimate interest in the manner of organization of the other or speculated on what might be gained or lost by effecting some definite and recognized association between the two types of organizations.

Management engineers and others functioning in the management field have always constituted the bulk of the membership of the technical societies carrying Scientific Management at their masthead — the Society of Industrial Engineers, the Taylor Society and more recently the Society for the Advancement of Management. Almost without exception the individuals belonging to these societies receive their compensation through fees, or salaries, from the owners of the enterprises to which they give their services. They are eventually part and parcel of the group owning the enterprise in which they work. Especially in view of the normal attitude, or what has been to date the normal attitude of the owners of industry toward labor unions, Scientific Management technicians might be expected to be neutral, if not a bit antagonistic, toward labor unions. At best they assume no responsibility for them or interest in their organizations and conduct.

MORRIS
LLEWELLYN
COOKE

Mr. Cooke is one of the pioneers in scientific management, beginning his work in 1907 when he reorganized the American Society of Mechanical Engineers under the direction of a committee headed by Frederick W. Taylor. In 1909 Mr. Cooke made a study of American collegiate administrative methods for the Carnegie Foundation. He studied G.O.P. and Pension Bureau under President Taft's Efficiency Commission. He has been Director of Public Works of the City of Philadelphia, Chairman of the Storage Committee of the National Council for Defense, Director of the Giant Power Survey, Member of the Power Authority of New York State, Chairman of the Mississippi Valley Committee, Administrator of Rural Electrification Administration, the U. S. Expert on adjudication claims against Mexico for expropriation of American oil properties, and Chairman of the President's Water Resources Policy Committee. Mr. Cooke was co-author, with Philip Murray, of **Organized Labor & Production,** published by Harper & Brothers.

On the other hand organized labor has taken a definite attitude toward Scientific Management since its early beginning. At first labor was wholly in opposition. But gradually under the influence of such outstanding leaders as Samuel Gompers, Sidney Hillman and Philip Murray the attitude was not only softened but in some places organized labor began to work out with Scientific Management the techniques and production practices agreeable to both sides of the bargaining table. Gompers, who inspired the International Labor Office, joined with Fred J. Miller, president of the American Society of Mechanical Engineers, and the author of this Foreword in editing a volume of the Annals of the American Academy of Political and Social Sciences devoted to production in industry. Hillman repeatedly conferred with S. M. leaders on the relative merits of day work and piece work. Murray joined me in writing *Organized Labor and Production* published by Harpers Brothers. So, frankly, as far as the record goes, labor has increasingly taken more interest in what have in times past been considered the affairs of ownership and management than the latter have taken in the affairs of organized labor.

In recent years the two groups—management and labor—have come nearer to each other through the more intimate associations of collective bargaining usually only related to hours, wages and working conditions. These particular subjects, however, no longer seem to afford the labor movement a sufficiently virile rallying cry. Further, I am convinced that collective bargaining cannot be effective if the workers' group participating is restricted to a single plant or the plants owned by a single company. Therefore, anything short of a national basis with regional and local subdivisions would probably be unwise from a social standpoint. In wage and other negotiations there is no way of meeting facts except with facts. The gathering of facts is a difficult and at best an expensive matter. Any small group of employees is at a fatal disadvantage in meeting the factual presentation of employers who are almost without exception directly, or indirectly, connected with nation-wide organizations. Shop organizations without national affiliations leave the organized workers without the resources—financial, technical, political—which they require to secure only that recognition which the best interests of our industrial society demand.

I cannot feel that collective bargaining constitutes the whole or deeper answer to our problem, essential as I recognize it to be. Nor will giving the organized workers simply a chance to criticize and complain on occasion, and to have these matters satisfactorily adjusted, be sufficient. One can imagine such a system operating at 100 per cent efficiency through a ten year period, and at the end of that time all organized opposition from the workers—whatever form it might take—would be at a standstill.

Industry like life itself does not stand still. No matter what may be the present status, some movement—we hope it will be progress—is assured. Certainly it does not seem likely that as industrial philosophy and practice develops labor and management will continue to stand aloof. Any policy which suggests a permanent division of those engaged in industry into two camps would appear to be out-of-date, and must necessarily become more and more out of harmony with a world studying discussion, mediation and conciliation and seeking to supplant competition by co-operation. If it can be accomplished, the group of workers must be collectively related to industry in a way not possible under a strictly bargaining status. What we want now is to set up an integrating process which will tend more and more to unite us in a common purpose. The development of the techniques by which such unity may be accomplished is a problem common to all productive enterprise whether operated by private capital, by the government, by municipalities, by co-operative societies, by the workers or otherwise.

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But the moment we suggest giving to the grouped workers such a functional place in industry, we are met with the statement that this necessarily means a divided leadership; and that leadership to be effective must head up in a single mind. It is argued that, to be effective, management must never be held back or interfered with by the group. This is said to be quite as much for the well-being of the wage earners as it is for capital. The guidance of an industrial enterprise as developed by Miss Mary P. Follett's *The Illusion of Final Authority* is a much more complicated matter than that contemplated by the arbitrary leadership of a president or even of a chairman of a board, however effective such officials may be.

Assuming that wages and status both have been satisfactorily provided for and that, for clarity of this presentation, there are no grievances of any sort, then it is argued that the group has nothing further to do, unless perhaps to secure the highest degree of co-operation on the part of each individual in carrying out the behests of the management. It is argued also that the functional work of management does not need to be supplemented by the group, except as management using its own initiative may from time to time delegate to the group isolated tasks which in the opinion of such management may better be performed by the group than by management itself.

We really know very little as to how leadership is constituted—what is its true inwardness—and one may well question whether the interposition of the grouped workers in a place of responsibility and authority in management will detract an iota from its effectiveness. Most of us act under very serious misapprehensions as to the unfailing wisdom of management, the singleness of its purpose, and as to its being untrammeled in reaching its decisions. The banks, for instance, in cases which have come to my attention, have made good management virtually impossible, and this quite as frequently through an unwise extension of credit as through its withdrawal. When I consider all the agencies inside and outside a plant which measurably influence its management I wonder whether we can actually delimit management in the sense that capital can be delimited.

There is, of course, a basic distinction in character between capital and management. But I should dislike to believe that there is any such decisive distinction between the characteristics and prerogatives of management on the one hand, and the characteristics and prerogatives of the grouped workers on the other, such as would preclude the interweaving of their efforts along functional lines. With the development of finer disciplines, on the part both of management and of the grouped workers, it may be possible to find ever widening areas of functional co-operation, and this without withdrawing from management one iota of what is vital in its leadership. Possibly management has even more to gain from such a rapprochement than has the cause of the organization of the workers.

I WISH I might be of use in bringing our profession of management engineering to feel that the great unthought-out problem of industry is how we can give grouped (or organized, unionized—call them what you will) workers a functional place in the industrial process. How can the group find a work essential to an ordered industry which it can do as well as, or probably better, than it can otherwise be done. I believe it must be something in no way related to the combat and argumentation which must necessarily go on where wages are determined under competitive conditions. I seek to lay this question and problem on the minds and hearts of my professional associates because in this situation, as in so many others, the technicians, though small in number, have come to occupy positions of great tactical importance. I have come almost to dread the typical expert in industry because his knowledge of processes and techniques, usually at the disposal of those who pay most for the service, simply adds to what is now recognized as the rapidly growing disparity in bargaining power between the ownership and the workers. When it was brute force, sheer numbers had weight. But as we get into the real science of industry the game is so intricate that numbers do not count for much. The industrial world is not giving sufficient recognition to the fact that the transference of skill, intensive mechanization, automation and standardization of process and product have markedly influenced not only the division of power between employer and employee, but the opportunity for fair and socially minded decisions. ■

CIPM Reports . . .

XIth WORLD MANAGEMENT CONGRESS SCHEDULED IN PARIS NEXT JUNE

ON JUNE 24-28, 1957, the XIth International Management Congress will be held in Paris, France, under the auspices of the Comité International de l'Organisation Scientifique (CIOS), of which CIPM is the U.S. member.

The Problems of Maintaining Continuous Full Employment, the Development of Automation in Industry, Operations Research, and the Dissemination of Top Management Principles and Techniques are among the subjects which will be discussed by leading management experts from the U.S. and other countries of the world. From the United States, John Diebold of John Diebold & Associates and Melvin Hurni of the General Electric Company will present international reports on automation and operations research respectively, and Henry Luce, Editor-in-Chief of Time Incorporated, will address the delegates of the Congress at a special plenary session. At another session, Lyndall Urwick, Chairman of the British management consulting firm of Urwick, Orr & Partners, Ltd., and management author of world renown, will speak to the Congress on the life and work of Frederick Winslow Taylor. There will also be many discussion groups composed of management leaders from the 27 member countries of CIOS who will meet to exchange ideas on management principles and practices of interest to all.

In addition to the actual working sessions of the Congress, there will be a reception at the City Hall of Paris for delegates and their wives, a visit to the Louvre in the evening to see some of the museum's masterpieces in an illuminated display, an evening at the Paris opera, and a gala dinner and festivities at the Palace of Versailles.

CIPM is now organizing a tour for U.S. delegates and their wives who plan to attend the Congress. A series of shipboard management conferences will be held on board the SS Flandre, leaving New York on Saturday, June 15, and arriving in France on the 22nd. Peter Drucker, management consultant, author, and professor of management, will lead discussions which will focus on the American papers to be presented at the Congress and on some of the major frontiers of American management. In the latter group of conferences, discussions will center around those areas of management in which American managers have the most to learn and in which they may face the greatest opportunities. Topics to be covered will include the Management of Innovation, the New Structure and Characteristics of the Work Force in America:—the shift from rank and file workers to technical, managerial and professional people, International Economy and the American Manager, and Managing as a Science and Profession—its present status, the new needs and opportunities, and the likely developments.

U.S. delegates attending the Congress are free to go by ship, return by plane, or make whatever travel arrangements they wish.

For further detailed information concerning the Congress, readers should get in touch with Colonel Philip Garey, Vice President in Charge of Operations, *CIPM*, 350 Madison Avenue, New York 17, N.Y.

Jane Dustan, CIPM Editor

S.A.M. is a charter member of CIPM, the Council for International Progress in Management, the American non-profit, non-political organization devoted to the practice of scientific management on the international level. CIPM is in turn a member of the International Committee of Scientific Management (CIOS) which represents the organized management societies of twenty-six nations.

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In this article some background material on technical proposals is given, some positive management action is outlined, and some general recommendations are made. It is hoped that the suggestions and material presented here will be of assistance in reducing the national cost of technical proposals and, more important, in diverting scarce, creative manpower to more fruitful tasks.

Technical Proposals—Their Uses And Abuses

by R. W. Johnson

**Director, Development Dept.,
Interstate Electronics Corp.,
Anaheim, California**

EVERY year millions of dollars and many thousands of precious engineering man-hours are spent on preparation of technical proposals—bids, if you prefer—for industry and government. A significant portion of the engineering overhead of many firms goes to support this effort, looked upon as an onerous but necessary chore by many an engineer and by management as well. In view of this expenditure, management may properly ask the following questions:

(1) Is the technical proposal effort really justified?
(2) Can efficiency be improved?
(3) What action can we take to ease the burden?

A proper beginning for this discussion is to define the technical proposal, to be sure we know what we're talking about. One engineer has a definition that goes something like this: *Technical Proposal: A verbose compendium in which the principal emphasis is on thumping one's thorax.* More precisely, the technical proposals under consideration here are those reports outlining, with varying degrees of thoroughness, a technical approach and solution to a particular problem set, which course of action is suggested by the contractor and stated to be what he would do if awarded the contract. Actually, a technical proposal might be anything from what the Hi-Fi man tells you verbally he is going to put into your custom installation, to a series of bound volumes on *A Plan and Procedure for Development and Launching of a Satellite of Mars*. It is a sales document, a technical report, an analysis, a convincer for the unconvinced, or sometimes an audacious mendacity, all tightly squeezed between two sometimes ostentatious covers and designed to impress the recipient with the technical proficiency of the contractor.

We will concentrate here mostly on the technical proposal with relation to government contracts or subcontracts of the negotiated type, usually cost-plus-fixed-fee. Not that this is the only application for a technical proposal—it might equally well be used in selling an idea for a new automobile to a manufacturer or an invention to an investor—but this application is the one that has the most effect on our military weapons programs, by devouring engineering manpower and sometimes causing misplacement of military development contracts. It is this application also that the public can control if need be.

So let's examine the way in which these proposals, the ones for negotiated-type military development contracts, come to be prepared and used. They may be of two general types, solicited and unsolicited. The unsolicited kind we will take up later. The solicited proposal arises because someone within the Military Establishment decides something is needed that is not on hand, and that the "something" is at least partially indefinite, having an element of uncertainty to it. That is, it is not something that can be bought from a manufacturer's catalog or a distributor's stock,

R. W. JOHNSON

Mr. Johnson has worked in electronics engineering since receiving his B.S.E.E. degree from the University of California in 1943. He has been associated with the University of California Radiation Laboratory and the Electronic Service and Engineering Company at Berkeley, the Philco Corporation in Philadelphia, the U. S. Naval Ordnance Test Station, the Electronics Division of The Ralph M. Parsons Company in Pasadena, and is now Director, Development Department, Interstate Electronics, in Anaheim, California. Mr. Johnson is a Senior Member of the Institute of Radio Engineers, a member of Eta Kappa Nu and associate of Sigma Xi. He is an enthusiastic amateur radio operator and has had many of his electronics articles published in technical magazines.

but rather it must be custom-made, tailored or developed to fit some special requirements. We will assume here that the need for this something is genuine and realistic—to do otherwise would precipitate a discussion that would take volumes and lead nowhere—so that our customer has a definite problem he wishes to solve, and expects to pay us to solve it. More precisely, he intends, we hope in good faith, to let a contract for this something to the firm who demonstrates to him that it has (1) the technical prowess to do the job, (2) the most appealing idea, at least from the standpoint of the reviewer, (3) an estimated cost that is not too high, again from the standpoint of the reviewer, and (4) a company that is reputable, and both financially and physically able to do the job. This is our assumption, and for the most cases it is a correct one; the other cases we will touch upon later.

So the government project engineer (this may be his counterpart within a prime contractor's organization, but for simplicity, though at some risk, we shall refer to both as government) prepares what he believes to be specifications for the job he wants done, makes his own estimate as to cost, prepares the necessary requisitions obligating his funds, and forwards the entire aggregation via the established channels to the contracting office. Now, if the government project engineer has done his job well; namely, prepared his specification with sufficient care and thoroughness that it can be readily interpreted and understood without ambiguity or misconception, made his cost estimates realistically, and properly documented his instructions to the contracting office, then he is likely to get just what he needs, and the contractor will enjoy a normal relationship.

At this point the contracting people, after a check of their source file and a check on the validity of the funds obligated and papers supplied, eventually release to a selected group of contractors a letter and copies of the specification, requesting that technical proposals and cost estimates be submitted by some date, usually one that elicits cries of woe from the recipients. This type of proposal is not advertised; bear in mind that the contract type under discussion is negotiated, and if there is sufficient justification, and if the contracting and technical people can agree on selection, it could just as well be awarded "sole-source" to a contractor who may get the job anyway. Sole-source procurements are officially viewed with suspicion, however, and checks as to dollar limitation are often imposed in the various services that make it necessary to obtain Washington approval under certain circumstances. The easier course is to release the specifications to at least three contractors who have indicated, and demonstrated qualifications in the field of the procurement, and then award the contract allegedly on the basis of a technical proposal and cost estimate.

It is here that the contractor's technical work really begins. Management must first decide on whether or not to prepare a response—the proposal—to the request they have received. To make this decision, they must evaluate (1) their workload vs. manpower available to determine (a) if they can spend the time on the proposal and (b) if they could handle the job if they got it; (2) their actual, not imagined technical competence in the field; (3) their competition, whom they may know to be interested in the same contract; (4) their previous history of performance on similar work, particularly for the same agency; (5) their capital and facility position; and (6) the profit potential of the job, as to paying overhead, generating a needed proficiency, establishing good will, creating a market, improving competitive position, improving manufacturing potential, permitting needed expansion, or producing a good fee. In some cases, management may even consider whether the previous attitude of the customer is hostile or cooperative, in short whether the contract would only be a continual hassle or would be administered fairly. How heavily the last point is considered depends on contractor esurience.

To make the important first decision, management must necessarily rely on facts or, more often, on opinions supplied it by engineers who would have to do the job. Arbitrary decisions have been made at this point, of course, but generally there is at least some staff consultation on the question. Quite often at this point, managers find themselves sitting as judge deciding on the arguments advanced by opposing technical factions—it is helpful in such situations to organize the discussion to a consideration of the various factors enumerated above, one by one; to bring in additional independent technical opinions; or to request written recommendations. Actually, engineers will seldom be adamant about declining a proposal, unless they themselves might have to write it, and this in itself is a trap to watch for—many a company has made a wrong decision to undertake a job they cannot handle by not probing deeply enough into both sides of the original question.

Assuming a decision to prepare the proposal, an overhead project is established and responsibilities assigned. Preparation of technical proposals for the government is a legitimate and allowable charge against overhead, both under the tax laws and under Armed Services Procurement Regulations. From this point on, there is little to guide the engineers charged with proposal preparation; it is indeed seldom that the specifications released by the customer contain anything more than generalities as to desired content of the proposal, or state the manner in which proposals will be reviewed. The well-prepared technical proposal should contain at least (1) a condensed statement of the problem; (2) a general discussion of the requirements, with particular reference to the difficulty in meeting them; (3) a proposed solution to the problem set, occupying as many chapters as there are significant parts to the problem set; (4) convincing arguments as to why this solution is the best one, including, if possible, a comparison with other possible solutions (this is a good way to eliminate some of the less-talented competition, by showing in advance that their ideas won't work); (5) a review of the *specific* qualifications of your company, to show why yours is in fact the only company that could possibly do the job right; (6) an outline of the method of approach, giving the work plan, personnel assignments, facilities to be used, procedures to be followed, and phasing of the project; and (7) a conclusion, summarizing what has been said and making the "clinching" argument. In the Appendices are placed derivations of any complicated mathematical relations that are not already obvious to the reader, references, bibliography, and usually space-filler material supplied by the sales department. It is difficult to generalize on what a technical proposal should contain, of course, because a proposal for an abstract or esoteric engineering study might be altogether different than one for a new piece of hardware, but the outline given applies to a majority of cases.

Several hundred (or thousand) man-hours later, and possibly after a few sleepless nights, depending on how unrealistic the time schedule is, there emerges the technical proposal, duly bound in attractive colored covers and ready for submission. Since in many cases the solution proposed is not well enough defined until late in the allowed period, no realistic cost estimates have been made, so these must be hurriedly assembled with all sorts of recaps covering just exactly how many man-hours of precisely which classifications are required, how much subcontracting, travel, material and consultant cost is involved, together with overhead, general and administrative expense, fee and all of the associated justifications, explanations and stipulations. The authorized manager or executive signs the letter of transmittal and has everything bundled off to the customer, turning to his morning mail to begin the cycle again on another request for proposal.

At this point we should remark that if this discussion sounds a little acrid, it is understandably so because the government, 165 million of us, are paying the bill for the skyscraping pilaster of technical proposals that are written each year. There should be, and is, a way to make the process less expensive.

What happens to the proposal after it is mailed, or freighted to the government contracting office? The various proposals are sorted, and the technical portions submitted to the government project engineer who originated the request, and possibly to a technical committee for review. The financial portions are usually retained by the contracting office and comparisons made between contractors in an attempt to somehow normalize their various bids to some basis where they can be compared, but usually without benefit of technical differences. Contracting officers have a rather wide latitude in this respect, and with only moderate effort they can introduce substantial distortion into their presentation if they desire to do so.

THEN later, the responsible technical person makes known his recommendations to the contracting office. He may choose one firm, or several, or none as having acceptable proposals—acceptable to him and/or his review committee, which of course implies that they understand the solution and agree with it, or at least are willing to chance leaving it up to one of the recommended contractors to deliver an acceptable system, whether or not like the one he proposed. At this point, a conference is usually established, at which the cost figures are reviewed again, this time with the technical people in attendance. An effort is made to reconcile the different estimates to some common denominator, and balance cost estimates against technical discussion to somehow arrive at a choice that can be justified.

THE SUCCESSFUL contractor is called in, and only here does the serious business of negotiation begin. The resulting definitive contract may bear little resemblance to the original request, since the contractor may have proposed an alternate solution to the one originally desired, and since the government project engineer may by now (having studied all the proposals) have developed more definite ideas of how the job should be done. In effect though perhaps not intentionally, the government project engineer may steer the contract specifications and later the development so as to embody the best features of all the proposals he has reviewed. During the negotiation, the contractor's hurried cost estimates are usually dissected and scrutinized, sometimes to the point where he wonders why he submitted the proposal in the first place.

And so ends the solicited technical proposal, with the award of contract to the successful bidder. Eventually, the unsuccessful bidders are notified and frequently their proposals returned; too often they learn the outcome through their own underground system and may never see their expensive documents again.

In the case of unsolicited proposals, the procedure is vastly different from that just described. Here, a company through its own awareness of the field, recognizes that a need exists within the military for a specific item — a technique, a method, a study, a piece of hardware, a system or a weapon—and the company has definite ideas on how this need can be fulfilled, and proposes to do it. Such proposals are usually of a proprietary nature, or at least are considered so even though the idea itself may have been generated by work on some other problem. Unless the company is well acquainted with the state of the art, however, and particularly in classified areas, it is likely to find that its "proprietary" idea has already been perfected and is in use, or is under development, or has been tried and discarded for valid and proven reasons. Therefore, management should carefully examine suggestions for proprietary proposals to be sure that the expense of preparing them is actually justified by the circumstances.

Should there be in fact a useful and unique solution to some pressing problem, an unsolicited proposal should be prepared by all means if it is desired to finance the development by government contract rather than by internal support. There is much more freedom permitted in preparation of unsolicited proposals than with those requested by the military—the reviewers are more likely to be numerous, so that the chances of finding an audience capable of understanding a highly technical discussion may be considerably greater. Also, by devoting intelligent discussion to it, it is possible to actually bring into focus a problem that wasn't really appreciated beforehand. On the other hand, the unsolicited or "proprietary" proposal is subject to a much more critical review, and often by competent people, wizened by continued exposure to such documents. The "show me" attitude and tendency to find fault with the analysis must be overcome by thorough, factual discussion of both positive and negative factors. In a sense, the unsolicited technical proposal is more of a challenge to the engineers preparing it than the usual variety—their arguments must withstand the closest scrutiny. At the same time, it is not prudent to disclose the full details down to a level that anyone could handle the development—retention of a few "trade secrets" is good insurance.

THE UNSOLICITED proposal should also contain a definite plan of approach, including if possible the specifications (in standard military form) for a contract, so as to firmly crystallize in the minds of the reviewers what it is that is being proposed. It is not sufficient to merely describe a new development in technical terms and then leave to chance the matter of how it is to be conducted and supported, and specifically what is to be delivered for the funds expended.

The unsolicited proposal is routed within the várious services in many ways, depending on the subject or the agency receiving it. In general, such proposals should be sent to the agencies most likely to have a need for the development (and known to have funds to support it); these agencies are known if engineers and management are really

CHAPTER HONOR ROLL

Congratulations to the current leaders in the Chapters' Membership Campaign. Quotas attained to date are:

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current in their knowledge of the field. A distribution list should appear on each copy so that all recipients know who already has additional copies; this saves time in forwarding for review. To cite a specific example, a proposal for a needed test-range instrumentation development within the Air Force should be sent and addressed to the Air Research and Development Command, but information copies might also be sent to the various ARDC test centers, with the distribution indicated on each. ARDC procedure is normally to ask for recommendations from the ranges under their command, and this procedure helps speed the communication process.

Management should not expect immediate action on unsolicited technical proposals made to the military. Because they are carefully reviewed by a large number of people, because the military may not yet be convinced that the problem is pressing enough to warrant the proposed development, and because funds may not be available for support of the project, it is not uncommon to find a lapse of many months, or years on a large program, before action is taken. After all, if a technical reviewer is completely engrossed in what to do about an impending crisis in his organization to keep it from becoming a disaster, he is not apt to be interested in a proposal for something that won't help him meet that crisis. This again is where a percipient count of the military technical pulse is invaluable; skillful timing of just the right proposal can yield surprisingly rapid action!

SO THE unsolicited proposal is delicate; it is bread upon the water; it is a speculation; and it is viewed with suspicion and must be convincing. But the reward may be high, the competition zero, and the action immediate.

As might be expected in any situation involving human behavior, the technical proposal method of military procurement is not without abuse. While it may be freely admitted that the abuses in many cases result in a good buy for the taxpayer, and are in an honest effort to get a job done, the damage is wasted engineering manpower — manpower of the companies that didn't get the job.

To illustrate the point, let us assume a hypothetical example. Assume that a government project engineer knows through competent evaluation that Firm A is a well qualified to undertake an instrument development program to satisfy a particular requirement arising from test of a new type of weapon. Firm A has many engineers who are particularly expert in this particular problem, and have proved their ability in past developments, and Firm A is known to be reputable, well-financed and well-managed. Solution to the problem is not obvious, but engineers of Firm A can be confidently depended upon to find a reasonable solution. Firm A is interested in doing the job, although because of the uncertainty it prefers a cost-plus-fixed-fee development. Now in this situation, the logical approach would be to award a sole-source CPFF contract to Firm A and let them begin work on the problem. If this were properly justified as an action to be in the best interests of the government, the chances are that the necessary approval could be obtained. Wishing to avoid the justification procedure, or merely acting illogically, or perhaps acquiescing to insistent demands of his contracting office, the project engineer adopts the technical proposal method, but resolves to give the job to Firm A if he can. So in due course Firms A, B, C, D, E and F are asked to submit proposals. Firm F wisely decides that its chances compared to those of Firm A are rather small and elects to assign its engineering manpower to more profitable tasks. Firms A, B, C, D, and E each spend about 250 man-hours preparing their proposals and cost estimates—a total cost to all of them of perhaps $10,000. The project engineer in his review has little difficulty in finding fault with the proposals of B, C, D and E—no two technical designs will be exactly alike and he merely has to begin his review on the assumption that he likes A's solution and that anything else proposed is not acceptable to him. Or he may have provided some additional insurance by being slightly more talkative to Firm A than to the others during technical discussions on the project, or by giving more complete answers to A's questions than to the others. So A is the firm recommended. The contracting office, in reviewing the cost figures, may also feel that Firm A is the best one for the job, and so finds it easy to call attention to differences in overhead, travel cost, salary rates or other items that might discredit the bids of B, C, D, and E by comparison to A, even if A's cost is somewhat higher. And so Firm A gets the contract, which was intended in the first place, and the $8000 spent by B, C, D, and E is wasted, paid for by their other contracts through the medium of overhead.

While the case just described is hypothetical, it nevertheless happens every day in some parallel way in hundreds of contracting situations. Some cases may be more flagrant, some more subtle. While one cannot charge influence without proof, there is also this inference in a good many cases. And in all of the cases, the government is the loser, whether or not the development is satisfactory.

THE PROPRIETARY rights of contractors are not always respected. Theoretically even the solicited proposal is the property of the contractor until it is accepted or purchased by the government, although it is evident that the public contributes to its cost through the company overhead. There have been cases where the ideas contributed by one contractor have been handed to another, after award of contract to the latter. In one example, a well-known agency actually rejected all proposals, including an alternate solution received from company X, rejecting X itself on debatable grounds that it had insufficient equipment with which to do the job. The agency then immediately released X's idea to the entire bid list, *including company X* with a request for revised proposals! Company Y, which had an unrealistic solution originally, was thus guided by X's approach and although financially responsible, made an "erroneous" low bid on the job and was awarded the contract. Y, later discovering the "error" in its estimate, asked for and received an increase in the allowable cost, losing only the fee on the increase. Meanwhile, company X has never had its proposals returned, nor was it notified officially of its rejection until many weeks after the actual contract was awarded to Y.

There have been cases of frivolous use of technical proposals to obtain "free" engineering—again, the public pays the bill, but at least it does not come from the budget of the man responsible. The technique can be quite simple: the government project engineer releases a specification and request for proposals, but "underestimates" the cost by a large factor. When the proposals come in, there are insufficient funds to handle the job, so he rejects all proposals. Meanwhile he has accumulated technical advice and suggestions that he can gainfully use to do the job himself.

Improbity is not always on the government side. Contractors have been known to bid CPFF contracts at ridiculously low figures, arguing that they are so efficient they can do the job for much less than the others. As the contract develops, they see to it that "extras" come up or are sold to amend the contract. With each amendment, an exorbitant estimate for each extra is made, so that the final contract total is about what the competition bid in the first place. Many of the extras draw additional fee as well. Or the contractor may simply overexpend his estimate, after the required notification and approval. In other cases, one or more contractors may "cooperate"—we won't say conspire—to the benefit of one member of the group, in exchange for subcontract consideration at a later date.

So the real point is that the very thing which the technical proposal system seeks to avoid happens quite regularly, when a distinction is drawn between the word "legality" and the word "morality", where there ought to be no distinction. The truly unfortunate result is that many thousands of precious engineering man-hours are literally being wasted in false pursuits; manpower that could be applied to solving our critical defense problems.

Remedies for this situation are neither obvious nor simple; if they were, there would be no problem as the military has accomplished much in the past few years toward straightening out its procurement system. But there are remedies, and a few suggestions will be given here for management to consider. Effective management action can be taken through responsible organizations and military contacts to bring about changes in the system. Such changes have been wrought before, and can be so again.

ASSUMING for the moment the technical proposal system is continued, there should be greater emphasis on standardized specifications and instructions to bidders for preparation of uniform proposals. Such guides as the National Military Establishment Outline of Form do exist, but are not rigidly enforced in procurement at all levels and are not entirely applicable to many research-and-development-type contracts where hardware production is limited. Education of government project people in how to prepare technical specifications can be very effective — a qualified speaker could cover most of the important agencies in the country in a few

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months, conducting a half-day lecture at each to assembled technical people to give them some guidance on how to express their requirements clearly, completely, and without ambiguity. Requests for proposals should specify exactly what is desired in the technical proposal, even to the extent of the chapter headings to be used, and should detail the method by which proposals will be evaluated and the points that will be considered. If this procedure is made uniform throughout the services, contractor engineers will soon find that they can prepare their discussions more efficiently and at lower cost, and reviewers will have a more solid basis for an honest and genuine comparison between presentations.

Greater emphasis should be placed on sole-source procedures in negotiated, CPFF contracts; although it is conceded that proper safeguards must be continued. Perhaps streamlining the approval procedure would make sole-source procurement a more attractive and direct method for the government project engineer and contracting officer. For example, the authority might be delegated subject to approval by a local, qualified technical and administrative committee sitting in judgment on each case, on the theory that a large group could hardly be considered culpable.

THE TECHNICAL proposal could even be abandoned entirely, and in its place be substituted a verbal presentation by the contractors' engineers, one firm at a time to a qualified technical group, followed by a question-answer session. To have a basis of record, the contractors' statements before the group could be recorded and transcribed. Selection would be made on the basis of the presentation, coupled with the known facts regarding the contractor's capability and background.

For purposes of initial evaluation, the detailed itemization of costs usually requested could be abandoned in favor of a lump-sum figure, which is about the only meaningful quantity in an uncertain development anyway. When the field is narrowed on technical grounds is soon enough to request a more detailed breakdown of costs, thereby saving much effort on the part of companies who do not qualify technically. A technique that has been used successfully by at least one agency is to request two bids: one cost-plus-fixed-fee and the other fixed-price. The agency reserves the right to select either bid, and to make a cost evaluation on the basis of fixed-price quotations.

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Another approach that is more brutal, but possibly beneficial, is to call a conference of the contractors remaining after narrowing the field, let them debate the merits of each others' proposals before a technical review committee, and let them also adjust their respective cost figures downward toward mutual compatibility.

In some very large projects, parallel contracts have been let to several qualified firms to pay them for preparation of technical proposals, which then properly belong to the government. This same approach could be used to advantage on smaller projects. On many study contracts, this is in effect just what is done. The study is paid for, and the report contains specific recommendations on how to do the job, with specifications for procurement. In such a case, the ultimate implementation can often be a fixed-price contract, because the study has served to better define the solution.

Management can do a great deal to help this situation within their own companies, by devoting more serious thought and attention to screening the requests they receive. Unfortunately, it is the senior engineering talent—the idea men with broad experience—that must be devoted to proposal work even with the best in technical writers available, and this talent is too scarce to be used indiscriminately.

REVISIONS are not needed to the Armed Services Procurement Regulations (ASPR) and to the various subordinate documents, such as the Air Force Procurement Instructions (AFPI), Army Procurement Procedures, and Navy Procurement Directives, to define the mechanics of technical proposals. Section 3, Part 1 of AFPI (paragraph 101), for example, outlines the Air Force procedure for requesting proposals, and attempts to establish standards of fair and unfair practices, but does not go far enough in establishing policy with respect to technical proposals—the emphasis is on pricing information rather than technical data. AFPI 3-101.53(h) states in effect that contracting officers retain full responsibility for source selection but may call upon engineering evaluation as a guide to their decision. In practice, the technical review is necessarily more than advisory, since most developments are highly technical in nature. Section 1, Part 20 of AFPI outlines the ethical standards for procurement personnel, but is principally concerned with such things as gratuities, conflict of interest and similar matters and says nothing about ethics of technical proposal review. In both AFPI and ASPR are found rules that say unsuccessful bidders must be notified and thanked for their interest, but neither document says *when* this must be done or what the disposition of the contractors' expensive documents is to be. According to ASPR 3-150, an unsuccessful bidder is entitled to know who won the contract and the total approximate price, but nothing is said about giving unsuccessful bidders an opportunity to challenge the technical approach of the successful bidder, when in reality this might be the best way of obtaining a critical and competent review of the technical merits of the winning proposal; at least it would give management some feedback on whether their engineers were in fact doing an adequate job of proposal preparation.

These are a few suggestions for coping with this problem—many more will occur to management, to engineers and to government if they will but consider the matter seriously and resolve to do something about it. Let's limit the uses and the abuses of technical proposals! ■

The department manager becomes accustomed to a certain amount of "Social activities" during office hours and in many cases becomes oblivious to it. Often he hires extra persons to produce work which his regular staff could handle. But how can a department manager determine the amount of Non-Productive Time (Delay Ratio Factor) occurring in his department? He has administrative duties such as production planning, research, and other detail work to do. He has no time to watch the employees. This in itself would be a waste of his salary. How, then, shall he proceed?

Delay Ratio Factor Can Be Applied In The Office

By Owen A. Paul

Executive Secretary
Indianapolis Redevelopment Commission
Indianapolis, Indiana

With the use of various flow charts the time elements of any one function can be determined. But no record-keeping device in the history of business has ever determined how much time employees spend on non-productive activities.

Time is money! It is $85,550.00 per year to our hypothetical average size department, hereinafter designated the "Submarine Underwriting Department" with 25 employees. This amount is actually what is paid for time. How much of this $85,550.00 is lost in the form of wasted time? How can we tell? Here is one way; a simple, easy way which will require very little of the manager's valuable time. In fact, this method can be used by the manager without interfering with his normal office routine.

The Delay Ratio Factor System involves the use of the form on a following page to obtain groupings of averages for the various factors. From these averages an overall average is determined. This overall average is the department's Delay Ratio Factor. It is readily acknowledged that this system is not an exactingly acurate one, but to be exact and accurate would require a much more complex record form and consume more of the manager's time. And it is known that managers will not use voluntarily any form which is complicated or which is time consuming. This system should be used only by the department manager for his own information. While this system only gives averages it is interesting to note that in several actual cases in which this system had been used, the averages proved out on random spot checks. That is when one department's Delay Ratio Factor was determined to be 45% according to the final analysis, random visits back to the department (before the results were given to the department manager) would show 45% of the employees occupied in various types of unproductive activities.

Before describing the Delay Ratio Factor System in detail there should be general agreement on the following two points:

1. THREE TYPES OF TIME:
   1.1 Productive Time—Time spent on assigned functions.
   1.2 Designated Non-Productive Time:
      a. Rest Periods—approximately 30 minutes per day.
      b. Rest Room Needs—approximately 30 minutes per day.
      c. Personal Needs—approximately 30 minutes per day has been recognized as the time required for personal business and social niceties such as phone calls, lodge, sorority and church needs, visiting errands, etc.
   1.3 Undesignated Non-Productive Time—This is the time spent by employees in visiting excessively, idleness, being absent from the desk or job.
2. CORRECTIVE MEASURES SHOULD BE INDEPENDENT OF THE DELAY RATIO FACTOR STUDIES.

   Delay Ratio Factor (DRF) studies should be used only to determine the condition or the need. As when woman looks into a mirror to see if her slip is showing—corrective measures are usually taken *privately*.

OWEN
A.
PAUL

Before joining the Indianapolis Redevelopment Commission Mr. Paul was Manager of the Planning Department of the Farm Bûreau Insurance Companies of Indiana; and prior to that he was in Business Methods Development with the Western Electric Company in Indianapolis. Mr. Paul also instructs in Management at Indiana University two nights a week. He is currently the President of S. A. M. Indianapolis Chapter.

Once the condition (degree of Non-Productive Time) is known, Corrective measures should be taken independently of the DRF studies.

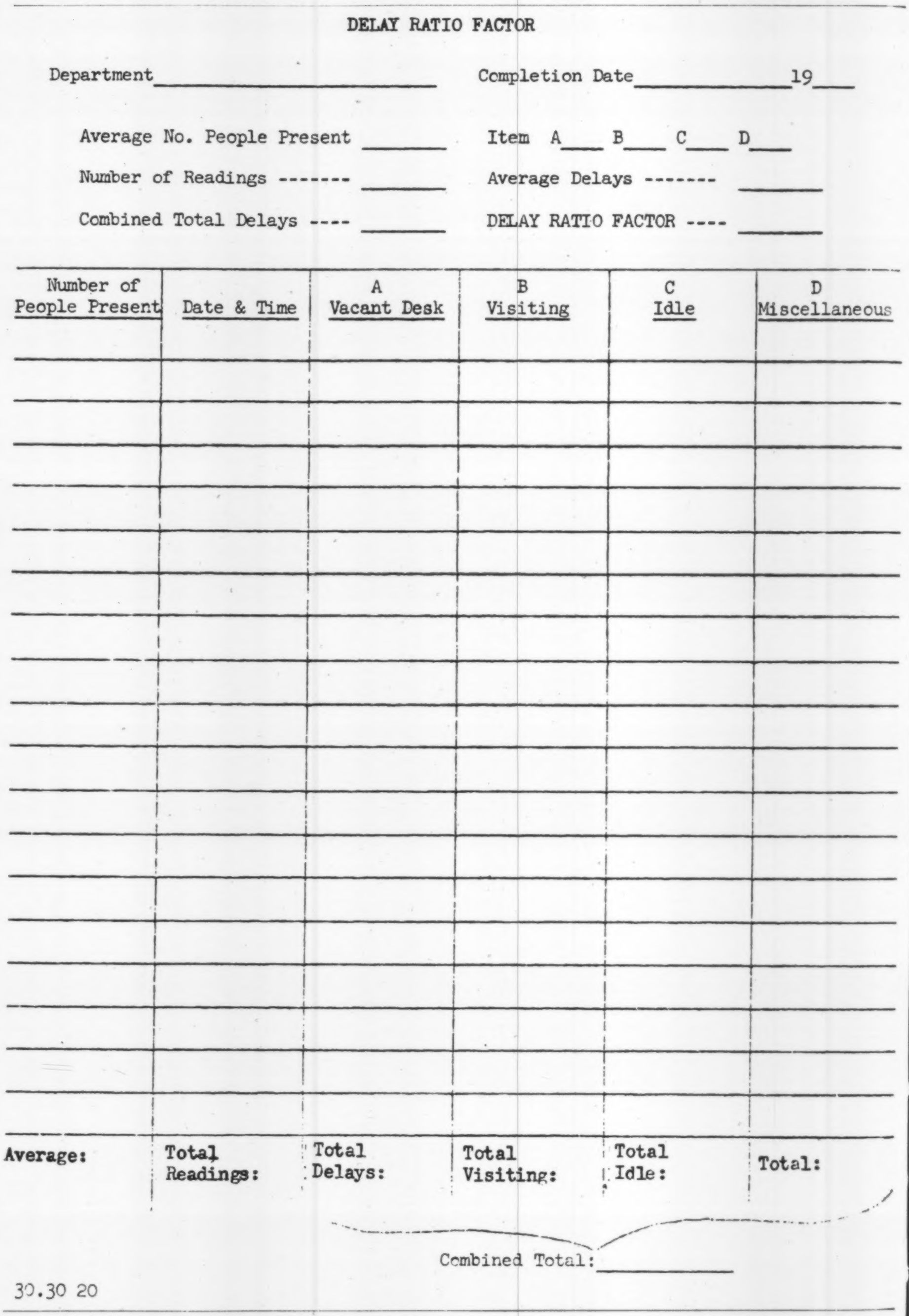
The DRF form is for the most part self-explanatory. The following points should be remembered:

1. The Columnar "readings" must be filled in first.
2. Readings must be taken at random.
3. No readings should be taken during rest periods.
4. At least 19 readings should be taken.
5. To complete the study after filling in the columns:
   a. Total all columns.
   b. Carry totals to spaces provided at the top of the form.
   c. Divide "combined Total Delays" by the "Number of Readings" to get the "Average Delays" or $\frac{CO}{NR} = AD$
   d. Divide "Average Delays" by "Average Number People Present" to get the "Delay Ratio Factor" or $\frac{AD}{ANPP} = DRF$
   e. The more readings that are taken the more accurate the average will be.

However it has been the experience of most users of this system that 19 readings, well spaced through several days, will be reasonably accurate.

The Submarine Underwriting Department Manager found that his department had a DRF of 15%. This is an excellent DRF because it is loaded with some elements of Designated Non-Productive Time (see ¶1.2 section b. & c.). So the department manager had to consider the following:

a. Naturally he did not include the "Rest Period" type of Designated Non-Productive Time in his study.
b. But the "Rest Room Needs" type of Designated Non-Productive Time was included (or charged to the study) since he couldn't very well know "What goes on behind closed doors"—so he subtracted 7% from the DRF of 15%.
c. Since his company wants to be considered a good place to work, and goes along with the "Personal Needs" type of Designated Non-Productive Time—he made the necessary allowances by subtracting another 7%.



DELAY RATIO FACTOR

Department____________________ Completion Date____________19___

Average No. People Present ______ Item A___ B___ C___ D___

Number of Readings ------- ______ Average Delays ------- ______

Combined Total Delays ---- ______ DELAY RATIO FACTOR ---- ______

Number of People Present	Date & Time	A Vacant Desk	B Visiting	C Idle	D Miscellaneous
Average:	Total Readings:	Total Delays:	Total Visiting:	Total Idle:	Total:

Combined Total:________

30.30 20

Note: This means he allowed for 1½ hours for rest periods, personal needs and personal niceties.

In view of the above explanation it is safe to assume that 15% is a good DRF. This means, of course, that the Submarine Underwriting Department has a negligent DRF of only 1%.

The trend is the important item. If the DRF is around 15%, a trend to a higher ratio indicates need for action.

Corrective action there must be—since even the 1% DRF indicates that the Submarine Underwriting Department is wasting $855.50 per year on lost time. A DRF of 17% should be a warning to the department manager that corrective action is needed.

It is recognized that any corrective action is the responsibility of the department manager. The DRF studies should also be the responsibility of the department manager.

It is best that the department managers take the DRF studies personally. The DRF system should be a tool to help the manager. It should never be used as a checking device by higher management. It is one of several tools which a department manager can use to determine that all employees are carrying their full share of the load.

The Submarine Underwriting Department with a DRF of 15% will be a good place to work. "Light is the task when many share the toil."[2] ∎

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[1] *Bulwer-Lytton: Caxtoniana Essay XXI on the Management of Money.*

New Management Writing . . .

STATISTICS FOR MANAGEMENT

By B. J. Mandel. Published by Dangary Publishing Co. $6.00. Baltimore 15, Md.

B. J. MANDEL, in this recently released book, has made a major contribution to management literature.

Designed to give the management student or executive a better understanding of statistics as a management tool for decision making, it thoroughly covers the principles which underlie the statistical approach to management problems and also the basic methods of fact finding and analysis of data.

Concise, well organized and written, easy to read and digest, it will be a godsend to those who have been looking for an introductory text on statistics as applied to business and management.

Its fourteen chapters and 408 pages give an overall perspective on the varied methods of quantifying activities and processes and on the related problems of accuracy, completeness, and representativeness of data. Emphasis is given to sampling as a short-cut to fact finding. Methods of analysis include the use of frequency distributions, averages, measures of variation and correlation, index numbers and time series.

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Each chapter is followed by a variety of practical problems and answers to most of the problems are given at the end of the book, a great help to the reader.

Mr. Mandel has been constantly mindful of the student's and administrator's problem in grasping the subject matter and makes it easier for the reader to understand by explaining the meaning of symbols, principles and methods of statistics. He uses many illustrations and takes nothing for granted regarding the previous analytical training and background of the reader.

His interesting style as well as his philosophy of statistics as applied to management functions makes this book both readable and teachable, as I can testify. Mr. Mandel and his associates used this text material in teaching Business Statistics at the University of Baltimore School of Business, Industry, and Management with outstanding success for many years prior to its publication in book form. In fact, he has made statistics one of our most popular courses.

The author believes that theory and practice must be intimately tied together and this he has done throughout the book.

He has also presented a number of important points not usually found in books on statistics. For instance, he points out the different methods in which the various statistical measures may be applied to management problems. For example, four or five different ways of using averages are explained; at least six ways of using measures of variation, particularly the standard deviation, are illustrated; several ways of sampling a file (or universe); two ways of determining the size of sample needed for different purposes; several ways of using frequency distribution in interpreting data, etc.

This tie-in of statistical measures with specific uses is a most important contribution to management because only when we can see how statistical method is used can we appreciate the need for learning the method.

Nowhere have I read as down-to-earth an explanation of sampling as in this book. The different ideas of probability, the concept of error and estimation are explained in a way everyone can understand.

There is one other phase of the book that I feel should be mentioned and that is the preamble to each chapter. Each gives in a nut shell the main points of the chapter and points up the importance of the chapter content.

STATISTICS FOR MANAGEMENT will bring to management people and students of management a thorough understanding of one of our most vital and powerful tools of scientific management—statistics. It is worth while reading for management people at all levels, and teachers of statistics should find it a veritable gold mine.

Clifford C. James
Dean, University of Baltimore
School of Business,
Industry and Management

AUTOMATIC DIGITAL COMPUTERS

by M. V. Wilkes. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York. 305 pgs. $7.00.

This book is intended to provide a general introduction to the principles underlying the design and use of digital computers. It covers the subject now generally known as logical design without entering into a detailed discussion of electronic circuit techniques. It also deals with the way in which programmes are constructed and methods by which the machine itself can be made to assist the programmer in his task. Discussion of what operations need to be programmed to solve particular problems—the subject of numerical analysis — is outside the scope of the book.

NEW FRONTIERS FOR PROFESSIONAL MANAGERS

by Ralph J. Cordiner. Published by McGraw-Hill Book Co., Inc. 1956. 121 pgs. $2.75

The author sets forth in this book the managerial philosophy behind his leadership of General Electric Company, describing the managerial policies and practices by which "it is possible to provide at once the big results that come from big enterprises and the human freedom that comes from respecting the competence and dignity of every individual in the enterprise." The book is based on a series of lectures which Mr. Cordiner delivered at the Columbia University Graduate School of Business, in 1956.

SCIENCE AND ECONOMIC DEVELOPMENT:
New Patterns of Living

by Richard L. Meier. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York. 1956. 266 pgs. $6.00

A provocative appraisal and synthesis of what is most promising in contemporary science and technology for world development.

NOVEMBER CHAPTER ACTIVITIES

CHAPTER	SUBJECT	SPEAKER	TITLE	PLACE	DATE
Alabama	Oil & Gas Industry Development in Alabama	Dr. Walter B. Jones	State Geologist	Tutwiller Hotel	13
Athens	The Westinghouse Strike	Dr. David Levinson	Associate Professor of Economics at Ohio University		20
Baltimore	Profitable Outlook for Business in 1957 — Probable Trends to Result from Presidential Election	Edward Booher	Executive V.P., McGraw-Hill Publishing Co.	Stafford Hotel	13
Binghamton	Human Relations	Prof. Glenn Olds	Dir. United Religious Works, Cornell University	Carlton Hotel	14
Boston	Progress By Selling Yourself	Jack Lacey	President, Lacey Sales Inst.	University Club	1
Bridgeport	Retirement and Insurance Plans	G. G. Terriberry	The Terriberry Company	Algonquin Club	13
Charlotte	What is Management?	John B. Joynt	American Enka Corp.	Mecklenburg Hotel	12
Chicago	Management Programming			Furniture Club of America	27
	Industrial Psychology: Personnel Testing—Employee Evaluation—Aptitude Testing	J. Danek	George Fry & Associates	Toffenetti's Restaurant	19
	Application of Direct Production Standards to Maintenance Work	R. H. Winkler	Asst. Chief Ind. Engineer, Swift & Company	Furniture Club of America	13
	New Techniques of Linear Programming	Dr. J. Dillinger	Northwestern University	Hardings Presidential Grill	6
	A Mechanized Plan for Production Control	J. D. Byrnes	International Business Machines	Furniture Club of America	15
Clearing	Legislation Affecting Business	Panel Discussion		Clearing Industrial Club	28
Cleveland	The Human Factor in Management	Al Cummins		Cleveland Engineering Society	19
Dallas	1957 Economic Picture	G. P. Hitchings	Mgr. Economic Analysis Dept., Ford Motor Company	Melrose Hotel	7
Detroit	Salaried Personnel Administration	T. A. Beaver	Manager, Salaried Personnel Dept., Central Industrial Rel., Ford Motor Company	Rackham Memorial Bldg.	27
	The Effect of the 32 Hour Work Week on the American Economy	Panel Discussion		Hotel Fort Shelby	13
Georgia	Personnel Relations	F. G. Atkinson	V.P., R. H. Macy & Co.	Elks Club	15
	Managing A Small Business Enterprise	Seminar		Price Gilbert Library	1 & 8
		Plant Visitation		Electronic Data Computer Center, Georgia Tech.	29
Greensboro	The Lincoln Electric Profit-Sharing Plan	J. F. Lincoln	Chairman of Board, Lincoln Electric Company	Sedgefield Inn	20
	Mathematical Programming	Workshop			5
Greenville	The Southern Textile Industry 1957	A. B. Sibley	Deering-Milliken Organization	Poinsett Club	14
Hartford	Am I Promotable	H. J. Phillips, Jr.	Director, Organizational Planning, U. S. Steel Corp.	Bond Hotel	15
Hudson Valley	Reducing Maintenance Costs	Jesse C. Jessen	Supervisor, Areas & Shoe Group, E. I. du Pont	Hendrick Hudson Hotel	13
	Improving Reading Efficiency	Chairman A. W. Thomas,		De Witt Clinton Hotel	29
Kansas City	Measurement of Indirect Labor In Industry	Panel Discussion		Continuation Study Bldg., K. U. Medical Center	16

NOVEMBER CHAPTER ACTIVITIES

CHAPTER	SUBJECT	SPEAKER	TITLE	PLACE	DATE
	Industrial Engineering Conference			Pickwick Hotel	16
Knoxville	Engineering and Production Night	R. A. McCarroll	Chrysler Corp.	Deane Hill Country Club	13
Lancaster	The Changing Management Concept	C. C. James	Dean, School of Business, Industry & Management, U. of Baltimore	Hotel Brunswick	20
	Brainstorming Techniques			Lancaster	7
	Brainstorming Techniques			York	8
	Plant Visitation			Armstrong Clusure Plant	20
Los Angeles	Cost Reduction & Management Controls	Phil Carroll	Management Consultant		7
Madison	Project Night	N. C. Allhiser	Chapter President	Spanish Cafe	14
Milwaukee	Aids to Management—Consultants—When and How?	Perrin Strykev	Asst. Editor, Fortune Magazine	E.S.M. Building	8
Montreal	The Guaranteed Annual Wage Plan After One Year				14
Nashville	Hospitals Are Everybody's Business	G. M. Goettelman	Johnson & Johnson	Hermitage Hotel	8
New Haven	Oral Communications in Industry	David C. Phillips	Head Dept. of Speech and Drama, University of Connecticut	South Meriden House	15
	Speed Reading Seminar	Raymond W. Miller, Chairman			8
Northeastern Pennsylvania	Executive Development	F. I. Ptucha	Daystrom Instrument	Hotel Sterling	5
North Alabama	Organization Analysis	Edward Jordan	Ordnance Weapons Command	Decatur Country Club	14
Northern New Jersey	Fundamentals of Time Study	Bob McKenny	Sperry Corp.	Bloomfield College & Seminary	19-26
	How To Conduct a W.S. Program	Herb Goodwin	M.I.T.		8
	Department Performance Evaluation	A. Garland	U. S. Metals Refining Co.	Essex House	15
Pittsburgh	Industrial Relations All-Day Conference			Gateway Plaza	15
Portland	Industry's Stake in the Point 4 Program	Clyde Walker	Portland General Electric	Public Service Building	28
Providence	How To Make Your Foremen Cost Conscious	R. W. Holmes	Olin Mathieson Chemical Corp.	Providence Engrg. Society	1
Raritan Valley	Some Useful Tools for Organization Analysis	S. C. Moody	American Cyanamid Co.	Roger Smith Hotel	11
Reading	Labor's Viewpoint of Management's Tools	William Gomberg	Professor, Washington U.	Green Valley Country Club	12
Richmond	Management Development	K. B. Watson	McCormick & Co.	John Marshall Hotel	27
Sacramento	Incentive Management	Jess E. Wilson	Crocker-Anglo National Bank	Capitol Inn	13
Trenton-Delaware Valley	Guideposts to Good Management	P. R. Freyd	Management Consultant	Hotel Hildebrecht	20
Washington	Management Performance Standards	J. B. Joynt	American Enka Corp.	Occidental Restaurant	28
Western Massachusetts	Manager Development	P. M. Oglee	General Electric		26
Western North Carolina	Panel Meeting on subject of N. C. State Taxes	Brandon Hodges	Chairman of Governor's Tax Study Program	The Manor	14
Wilmington	Communications in Modern Management	H. F. Dunning	Scott Paper Company	Lord de la Warr Hotel	13
Worcester	Is There an Answer to the Guaranteed Annual Wage?	P. L. Davis	Gillette Safety Razor Co.	Worcester Airport	19